Water Conditions Summary

Operations Control and

Technical Support Department

Operations & Maintenance Resource Area

Governing Board Presentation

June 13, 2002

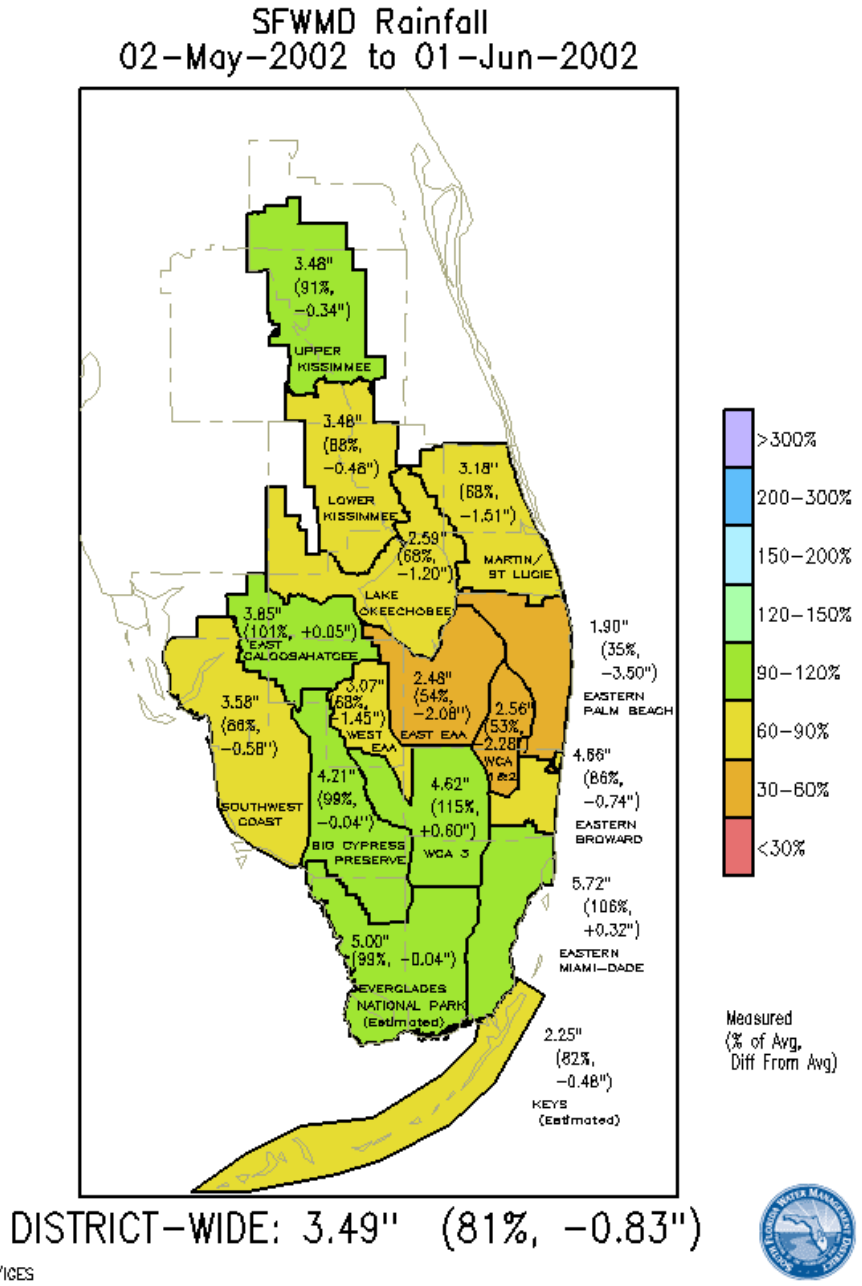
Meteorological Conditions

Meteorological Conditions

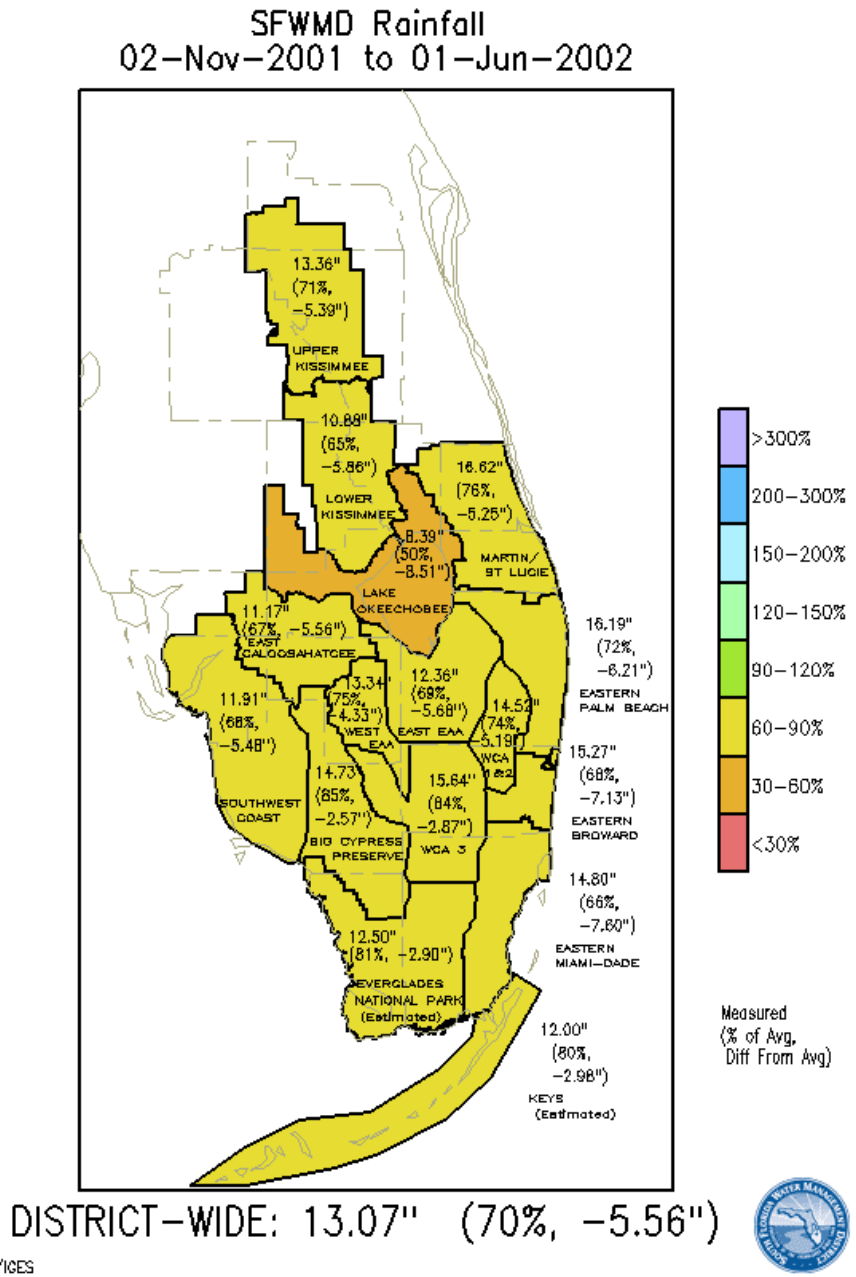
Meteorological Conditions

- **May continued the trend of below average rainfall this dry season**
  - 2001/2002 dry season exhibited below average rainfall: 70% of average
- May Rainfall : District-wide rainfall was 81% of average
  - Normal Rainfall: 4.32 inches
  - Actual Rainfall: 3.51 inches
  - Est. Pan Evaporation: 6.30 inches
- June Rainfall : To-date District-wide rainfall is 70% of average

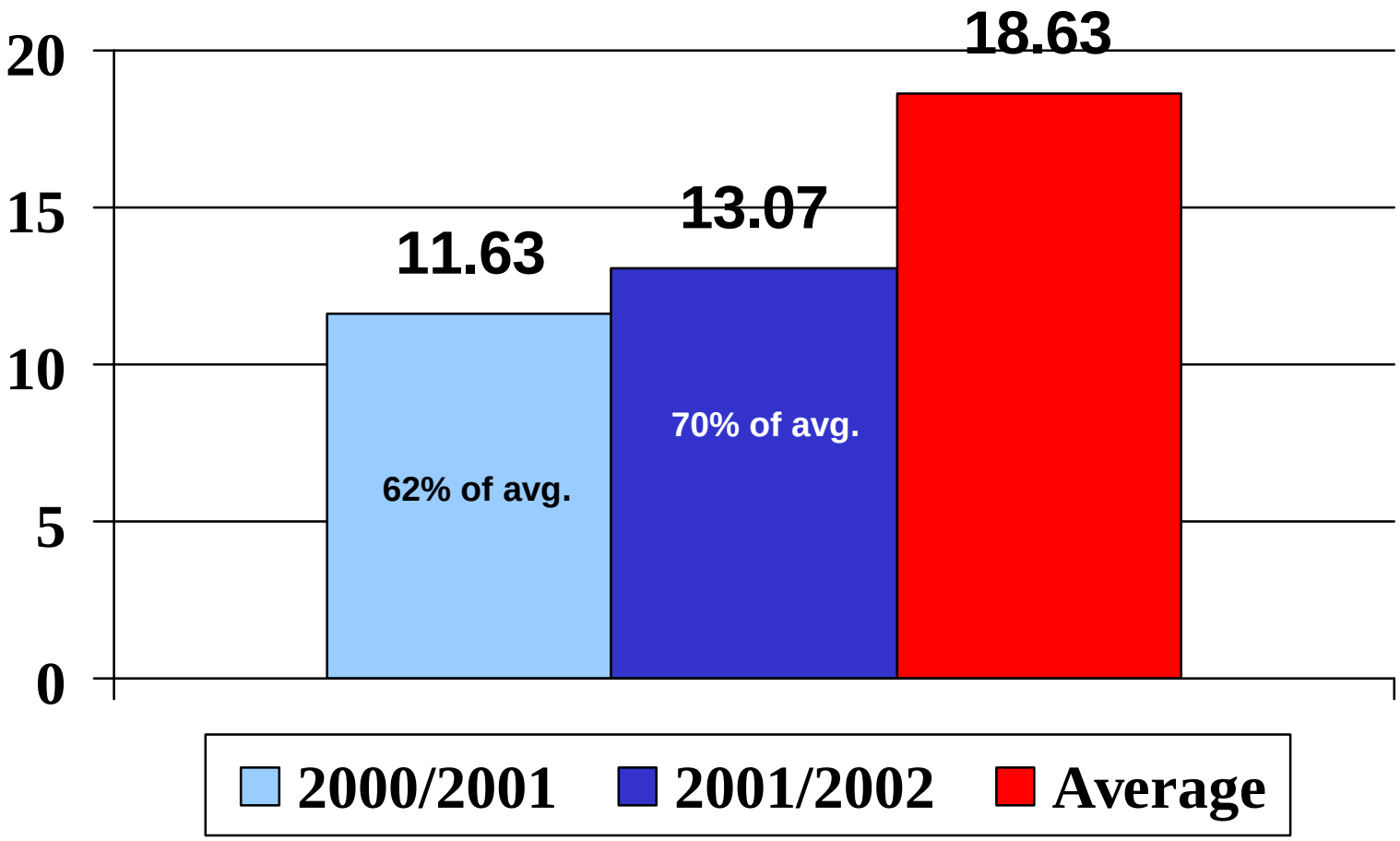
- May exhibited below average rainfall over most of the District.
- Upper Kissimmee & Monroe, Miami-Dade, Hendry & Collier counties received near average rainfall
- Palm Beach County received well below normal rainfall



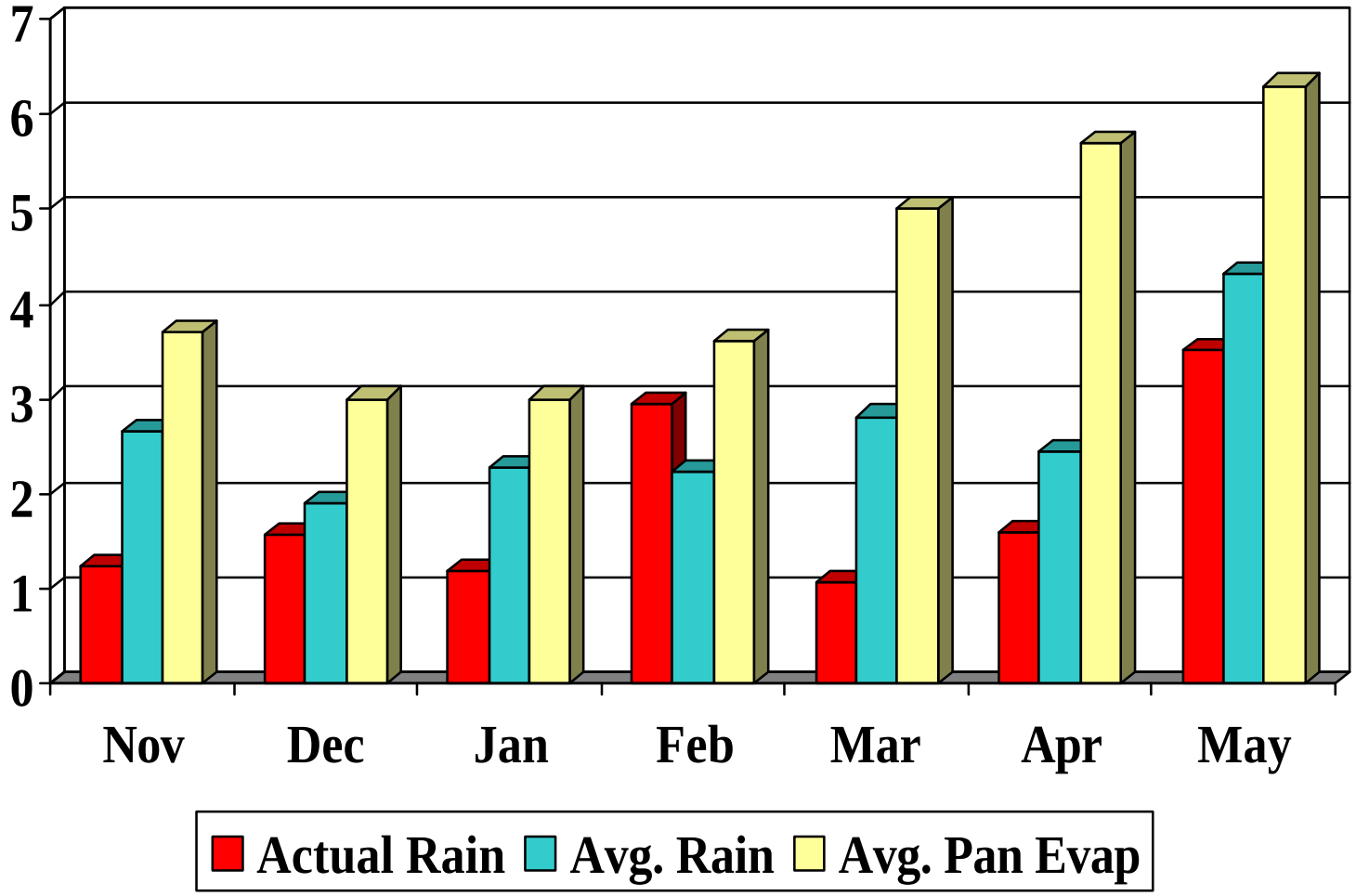
- 2001 - 2002 dry season exhibited below average rainfall over most of the District.
  - 70% of average
    - 18.63 in. (normal)
    - 13.07 in. (actual)
    - 5.56 in. below avg.
- Lake Okeechobee received well below average rainfall
  - 50% of average (~8 in)

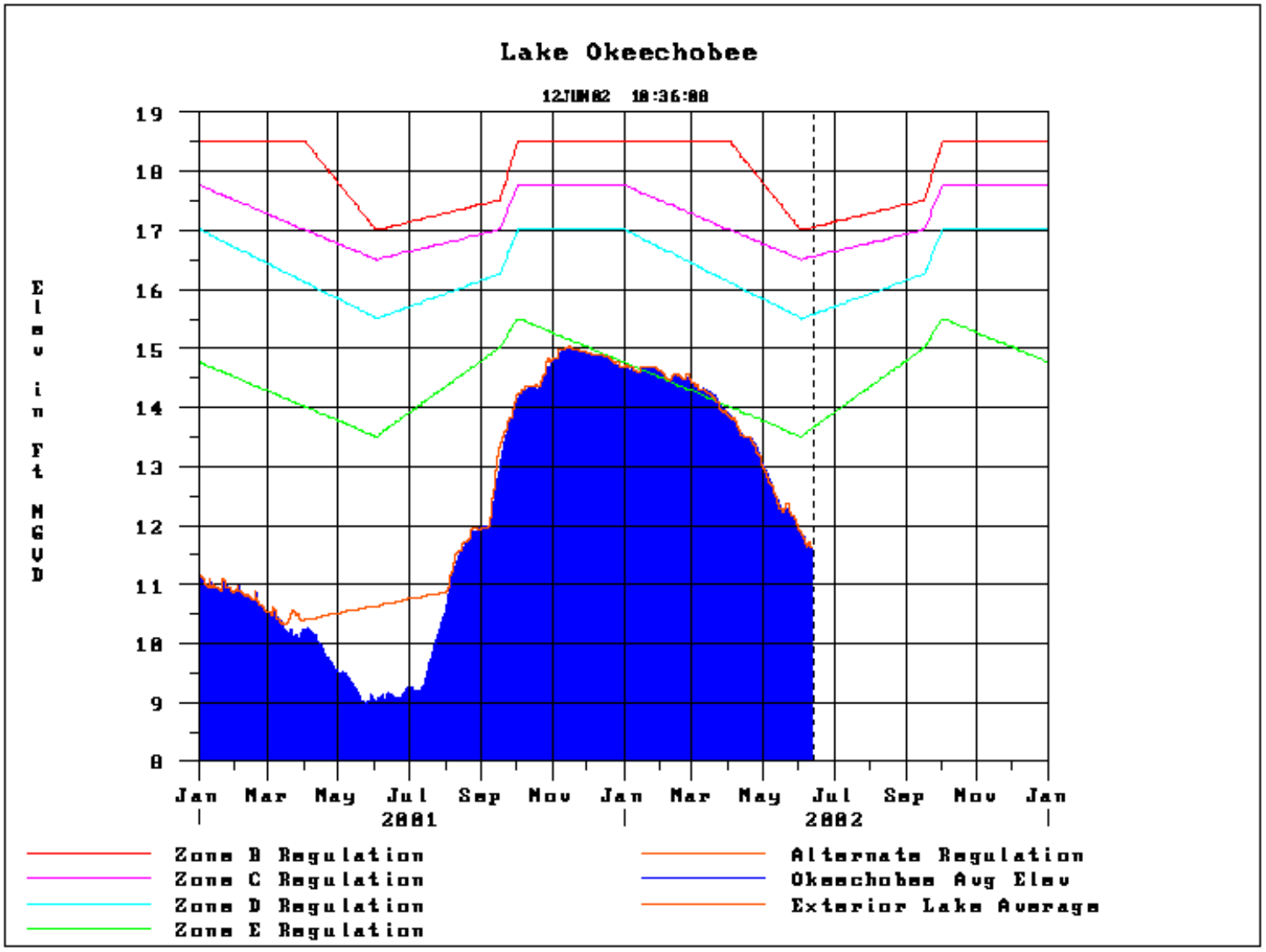


SFWMD November-May Rainfall



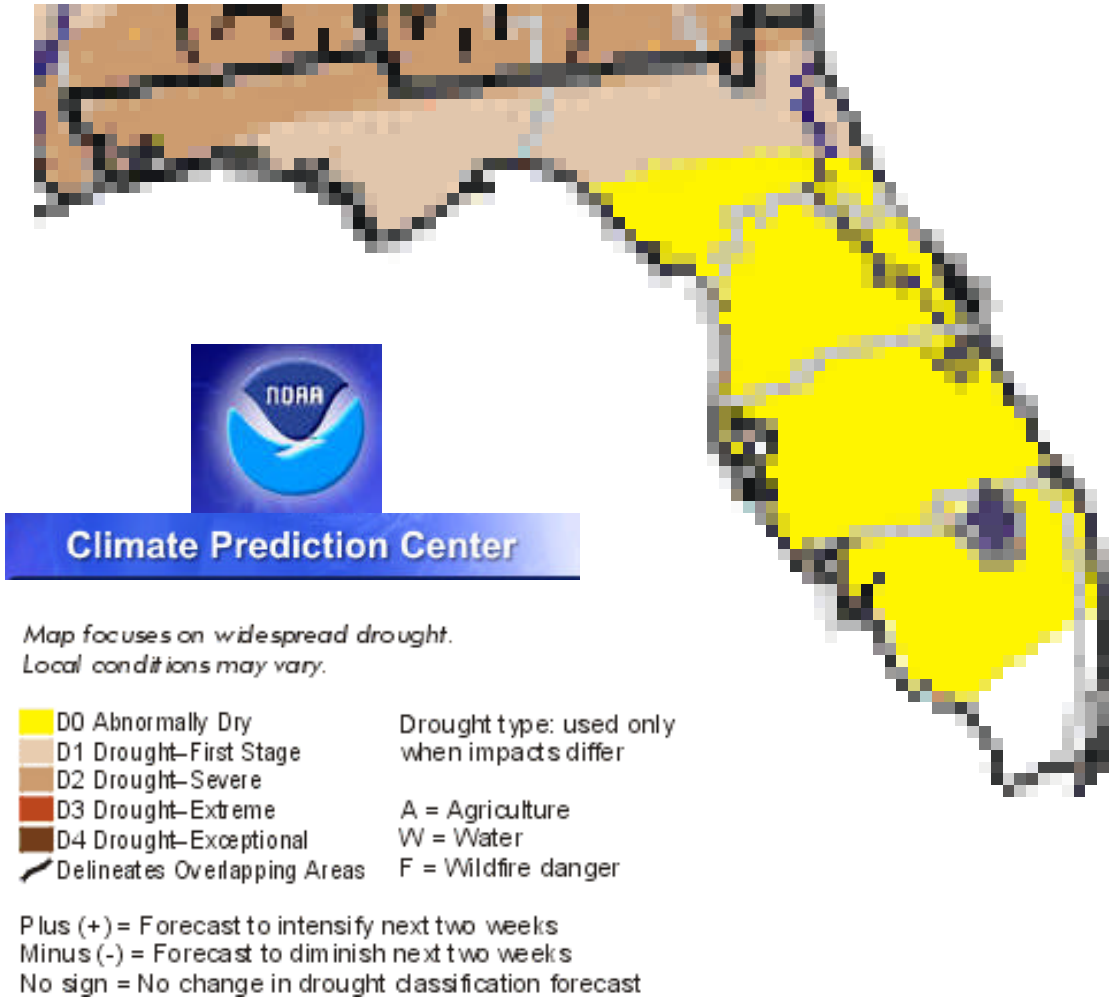
2001 / 2002 Monthly Rainfall & Evaporation




Lake Okeechobee
12JUN02 18:36:00
Elev in Ft NGVD
19
18
17
16
15
14
13
12
11
10
9
8
Jan
Mar
May
Jul
Sep
Nov
Jan
Mar
May
Jul
Sep
Nov
Jan
2001
2002
Zone B Regulation
Zone C Regulation
Zone D Regulation
Zone E Regulation
Alternate Regulation
Okeechobee Avg Elev
Exterior Lake Average

Current Climate Conditions

- Abnormally dry hydrologic conditions are indicated across most of District in the latest CPC drought outlook



General Hydrologic Conditions

Governing Board Presentation - June 13, 2002

General Hydrologic Conditions

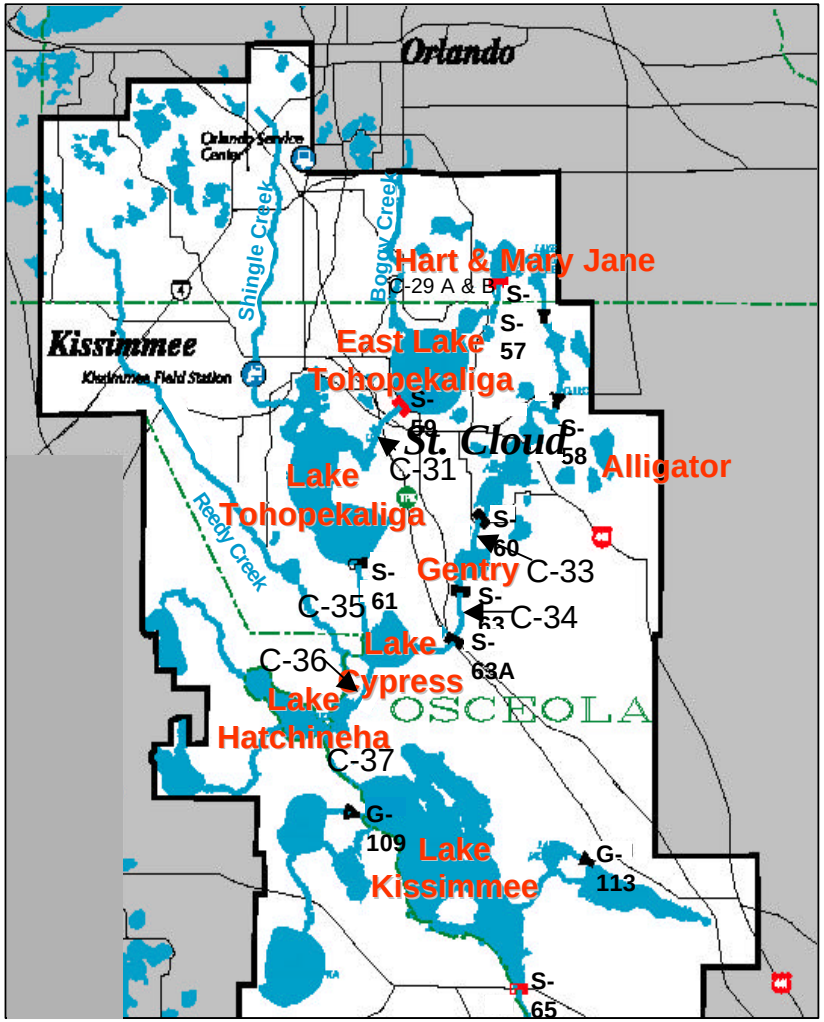
- G **Upper Chain** - Normal seasonal levels
- G **Kissimmee River** - Normal seasonal levels
- G **Lake Okeechobee** - Below normal levels
- Y **Lake Okeechobee Agriculture** - Short-term water supply concerns if dry conditions persist
- Y **Estuaries** - Mod. salinity in Caloosahatchee

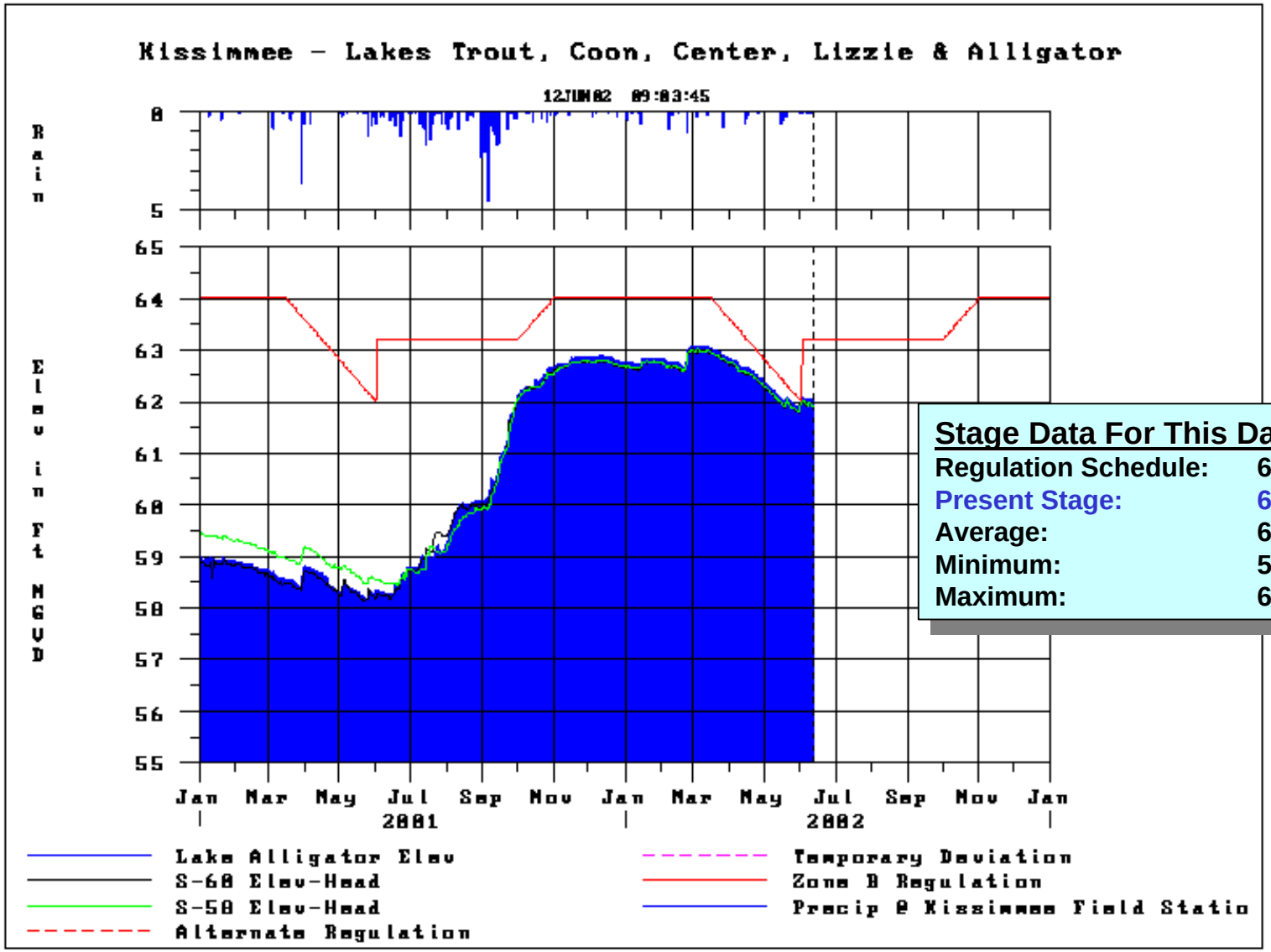
General Hydrologic Conditions

- G **Water Conservation Area 1 -** >Norm. Stages
- G **Water Conservation Area 2 -** >Norm. Stages
- G **Water Conservation Area 3 -** >Norm. Stages
- G **ENP -** Normal seasonal conditions
- G **Fl. Bay** - Normal seasonal conditions
- G **Upper East Coast** - Norm. canal levels
- G **Lower East Coast** - Norm. groundwater
- Y **Lower West Coast** - Low. groundwater

Hydrologic Conditions
Upper Kissimmee Basins

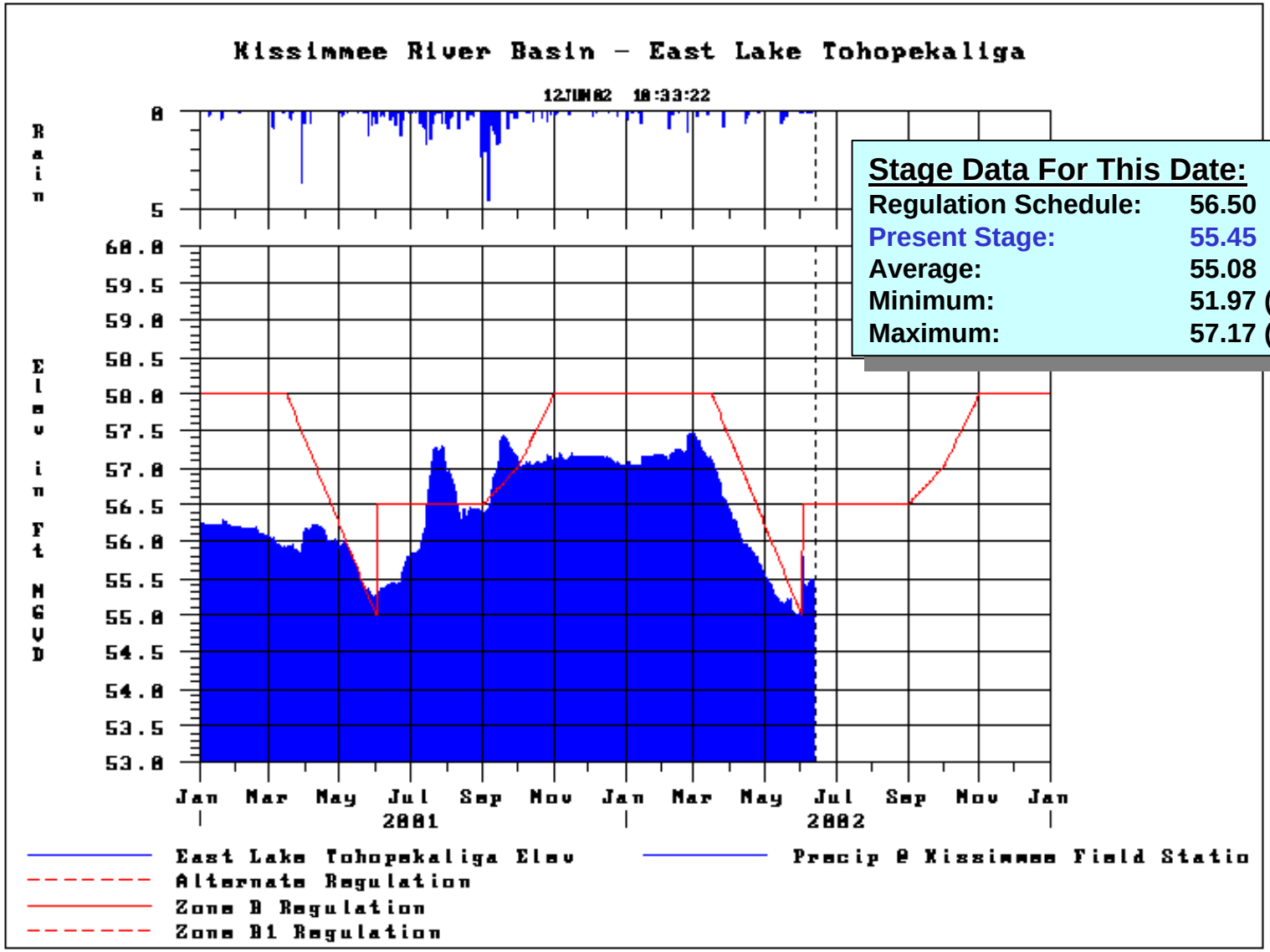
- All lakes are between 0.3 and 2 ft. below their regulation schedule
  - This condition is typical at the the start of the wet season
  - Provides flood storage in lakes
- Minor environmental releases (~300 - 400 cfs) from Lake Kissimmee continue in accordance with the interim restoration schedule

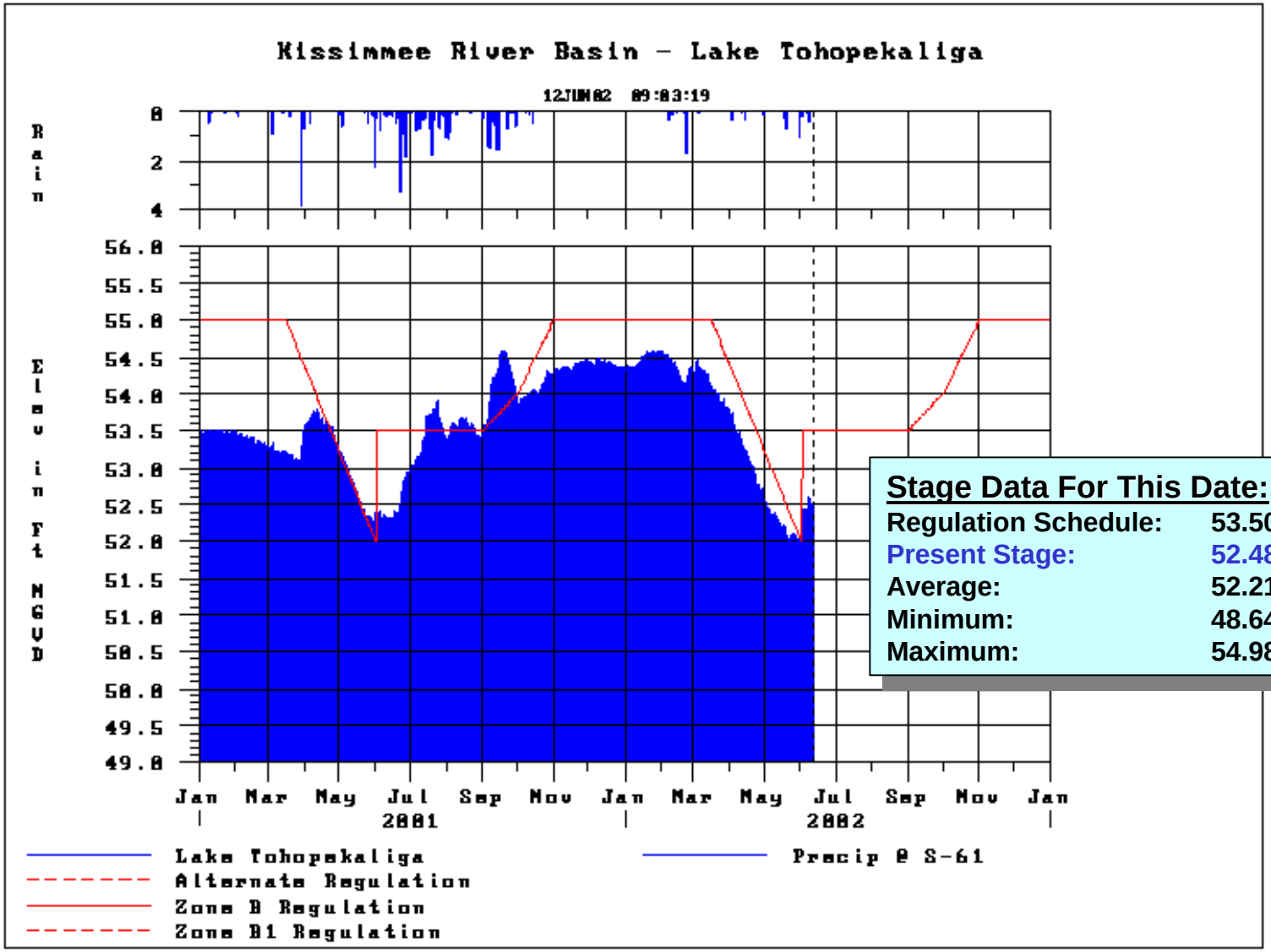


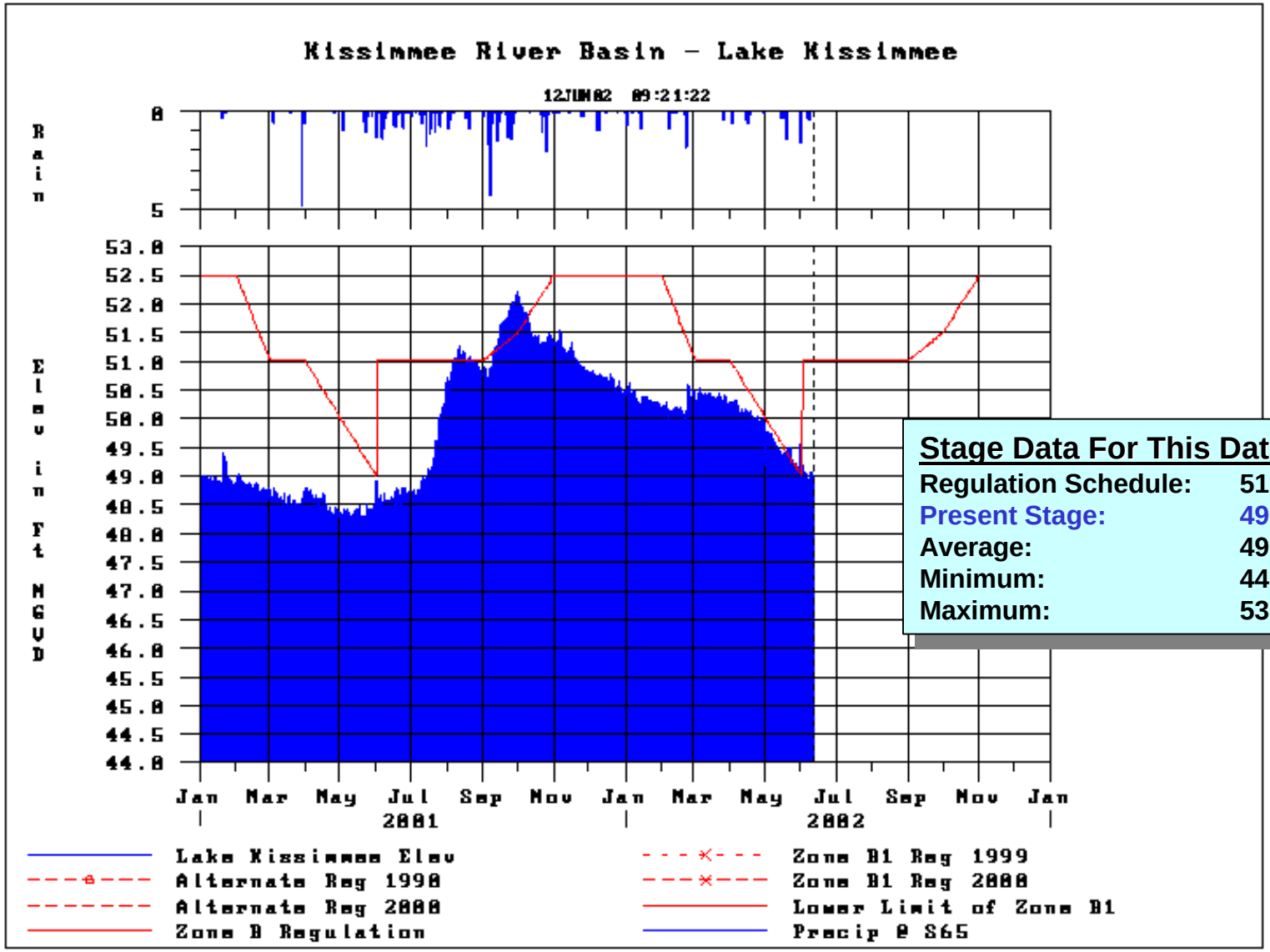


Stage Data For This Date:

Regulation Schedule:	63.20
Present Stage:	61.89
Average:	61.87
Minimum:	58.16 (2001)
Maximum:	64.94 (1942)


Kissimmee River Basin - East Lake Tohopekaliga
12JUN02 18:33:22
Rain
Elev in Ft NGVD
8
5
68.0
59.5
59.0
58.5
58.0
57.5
57.0
56.5
56.0
55.5
55.0
54.5
54.0
53.5
53.0
Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan
2001
2002
East Lake Tohopekaliga Elev
Precip @ Kissimmee Field Statio
Alternate Regulation
Zone B Regulation
Zone B1 Regulation
Stage Data For This Date:
Regulation Schedule: 56.50
Present Stage: 55.45
Average: 55.08
Minimum: 51.97 (1962)
Maximum: 57.17 (1968)

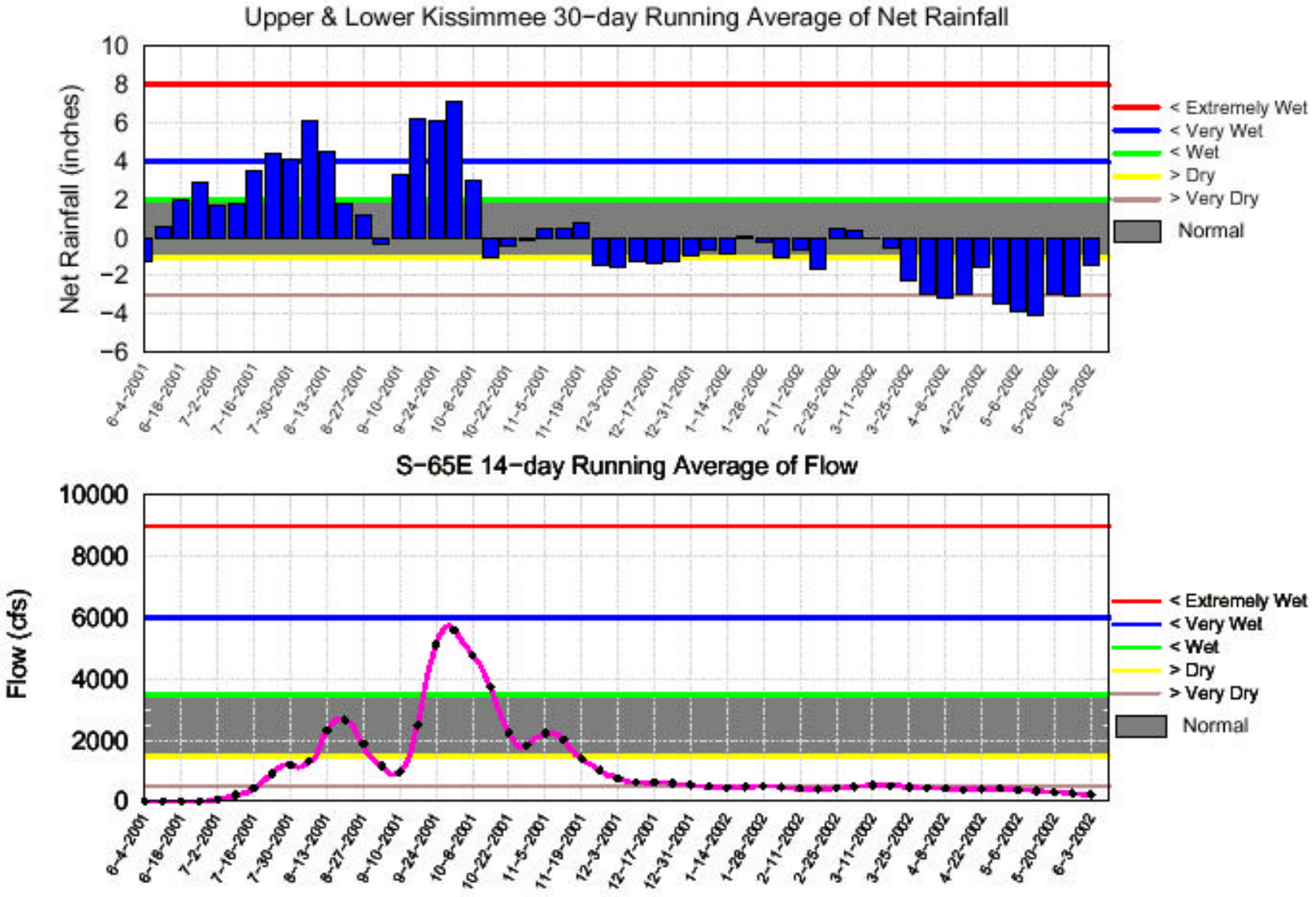

Kissimmee River Basin – Lake Tohopekaliga
12JUN02 09:03:19
Rain
0
2
4
Elev in Ft NGVD
56.0
55.5
55.0
54.5
54.0
53.5
53.0
52.5
52.0
51.5
51.0
50.5
50.0
49.5
49.0
Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan
2001
2002
Lake Tohopekaliga
Alternate Regulation
Zone B Regulation
Zone B1 Regulation
Precip @ S-61
Stage Data For This Date:
Regulation Schedule: 53.50
Present Stage: 52.48
Average: 52.21
Minimum: 48.64 (1987)
Maximum: 54.98 (1960)



Stage Data For This Date:

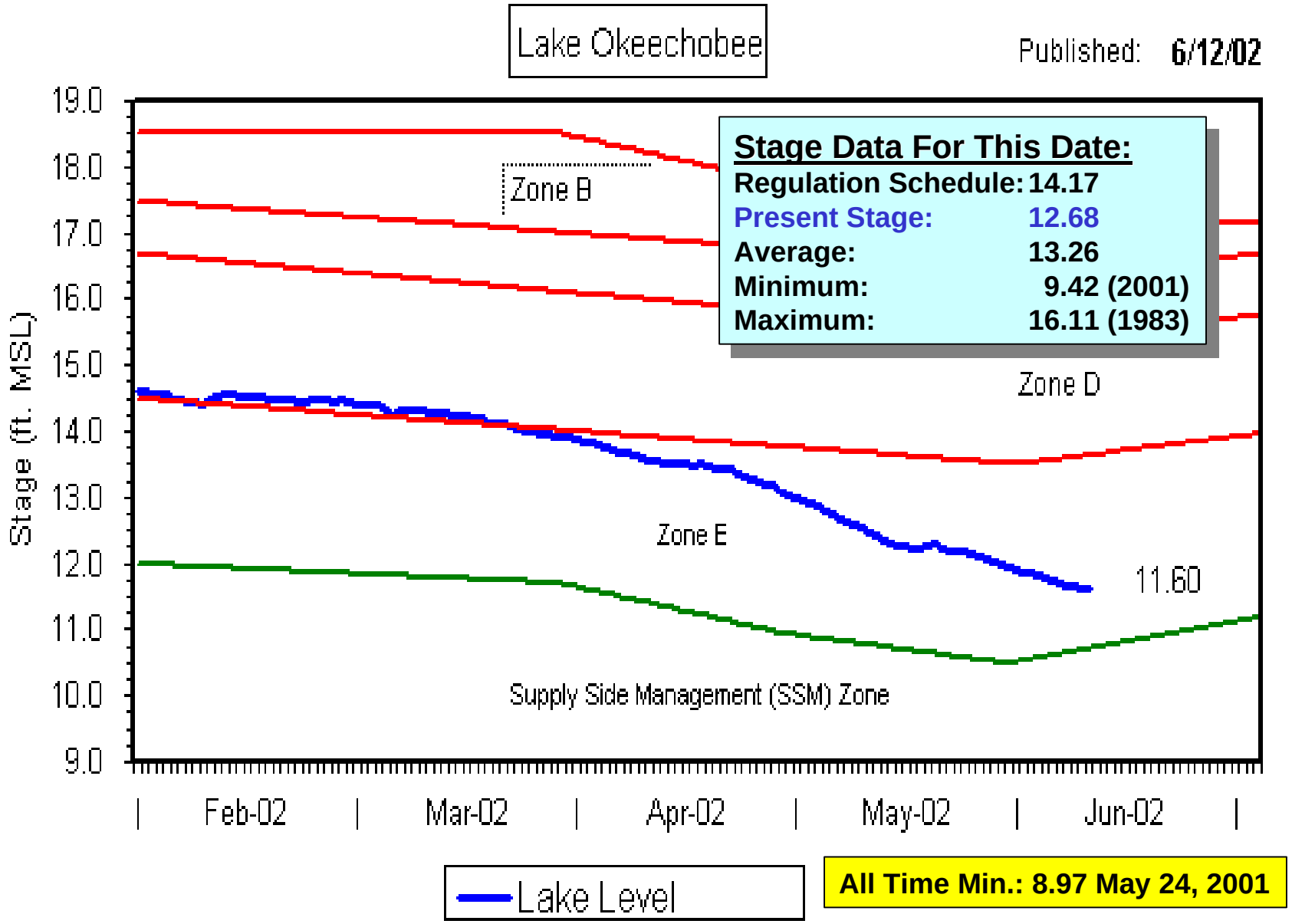
Regulation Schedule:	51.00
Present Stage:	49.04
Average:	49.15
Minimum:	44.30 (1962)
Maximum:	53.53 (1960)

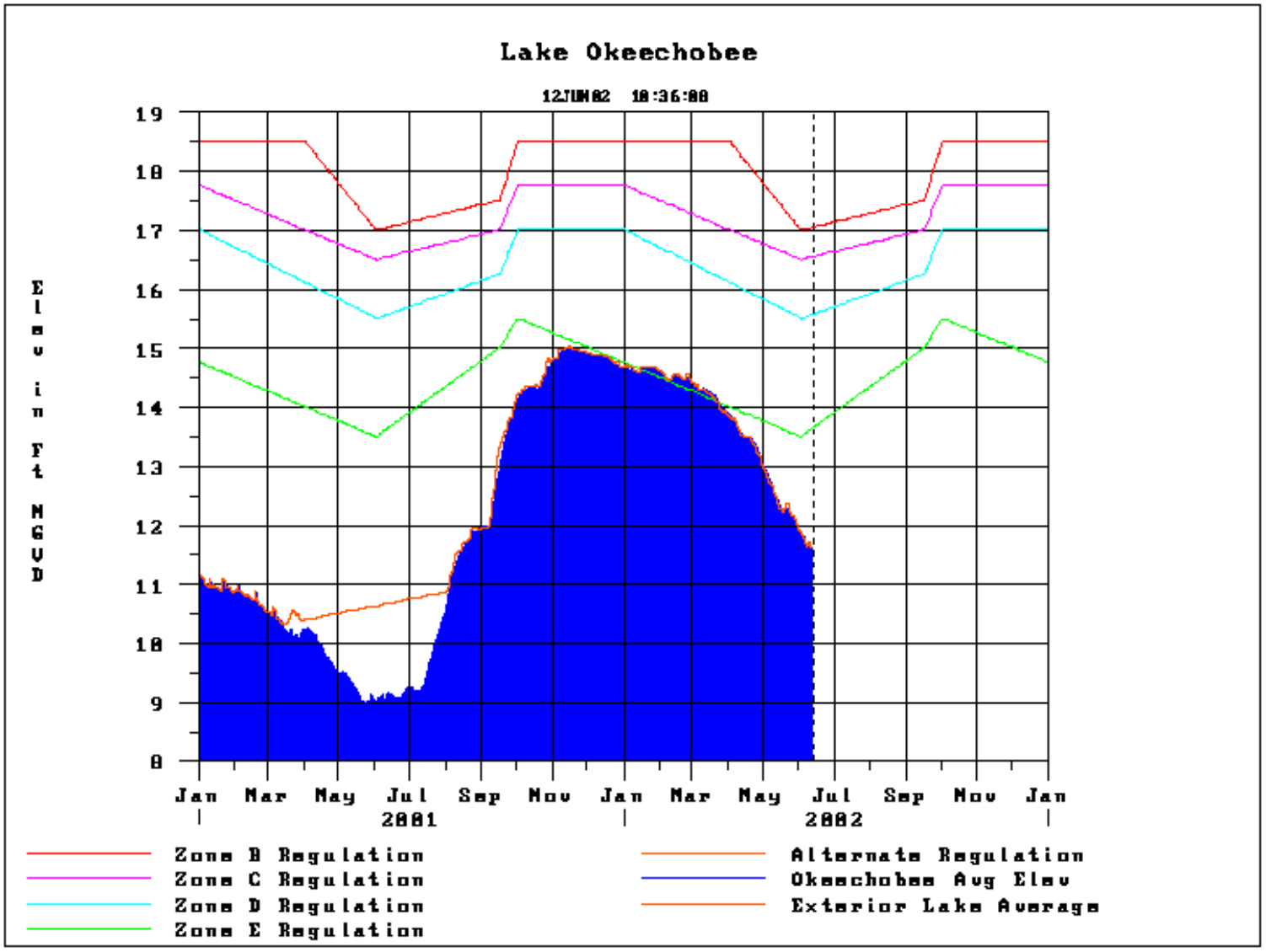
Tributary Basin Condition Indicators as of June 3, 2002



Hydrologic Conditions
Lake Okeechobee

- Lake Okeechobee stages have continued to recede in response to below average dry season rainfall over the past month
- Water supply releases are decreasing as demands are reduced by recent early wet season rainfall


Lake Okeechobee
Published: 6/12/02
Stage Data For This Date:
Regulation Schedule: 14.17
Present Stage: 12.68
Average: 13.26
Minimum: 9.42 (2001)
Maximum: 16.11 (1983)
Zone B
Zone D
Zone E
11.60
Supply Side Management (SSM) Zone
Stage (ft. MSL)
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
Feb-02
Mar-02
Apr-02
May-02
Jun-02
Lake Level
All Time Min.: 8.97 May 24, 2001


Lake Okeechobee
12JUN02 18:36:00
Elev in Ft NGVD
19
18
17
16
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10
9
8
Jan
Mar
May
Jul
Sep
Nov
Jan
Mar
May
Jul
Sep
Nov
Jan
2001
2002
Zone B Regulation
Zone C Regulation
Zone D Regulation
Zone E Regulation
Alternate Regulation
Okeechobee Avg Elev
Exterior Lake Average

Lake Okeechobee Current Operations

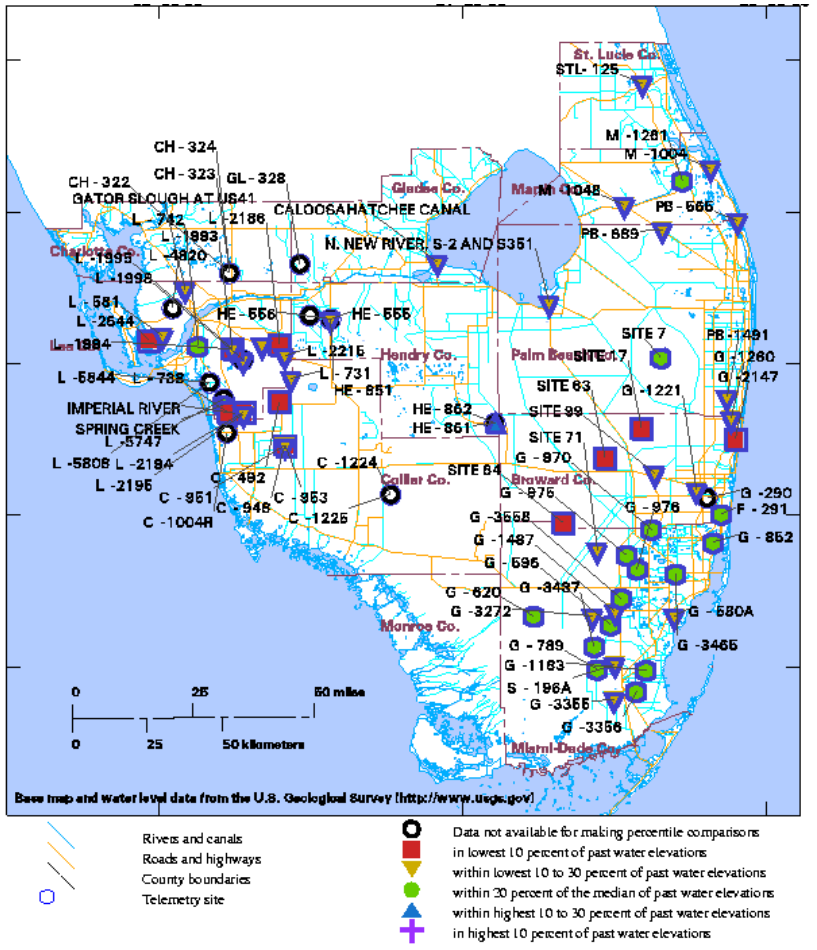
- **Lake Okeechobee Regulation Schedule (WSE)**
  - Stages presently in Zone E
  - Below normal Kissimmee River inflows
  - Normal rainfall
  - Wet seasonal forecast
  - Wet multi-seasonal forecast
- No required regulatory discharge to the WCAs
- No required regulatory discharge to estuaries

Caloosahatchee River Water Deliveries

- Small releases were initiated in mid-December to moderate high salinity
- Estuary water deliveries were stopped on April 26th
  - Approximately 120,000 ac-ft of water has been released from Lake Okeechobee to the estuary
    - 39.2 billion gallons
    - 0.27 ft. of equivalent lake depth
- High chloride levels at the Olga Water Treatment Plant intakes required water supply releases on May 4th and another on June 1st

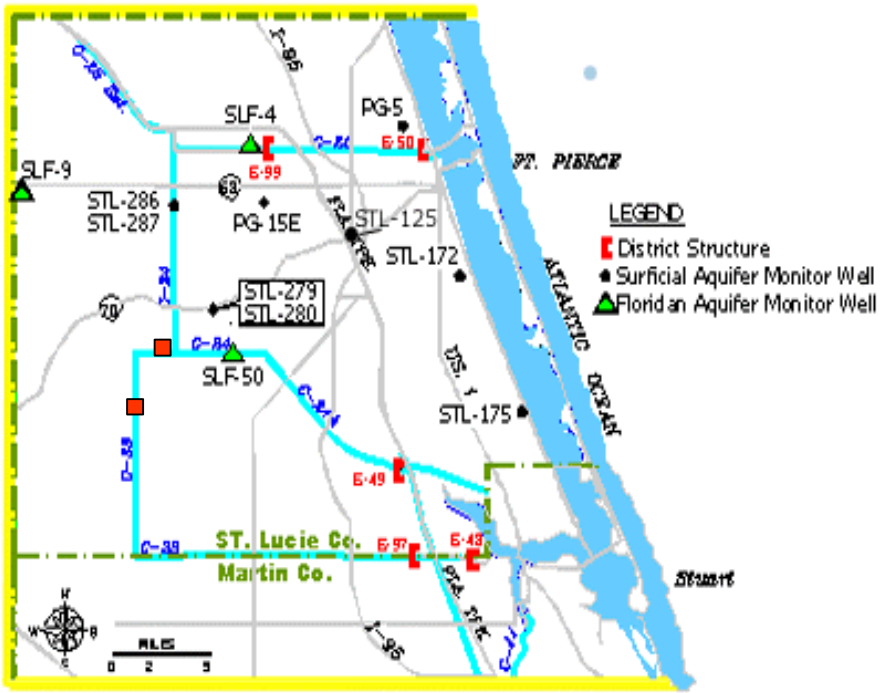
Hydrologic Conditions
Groundwater Conditions

- Upper East Coast, Lower East Coast
  - Normal seasonal levels
- Lower West Coast Region:
  - Low levels are improving in areas

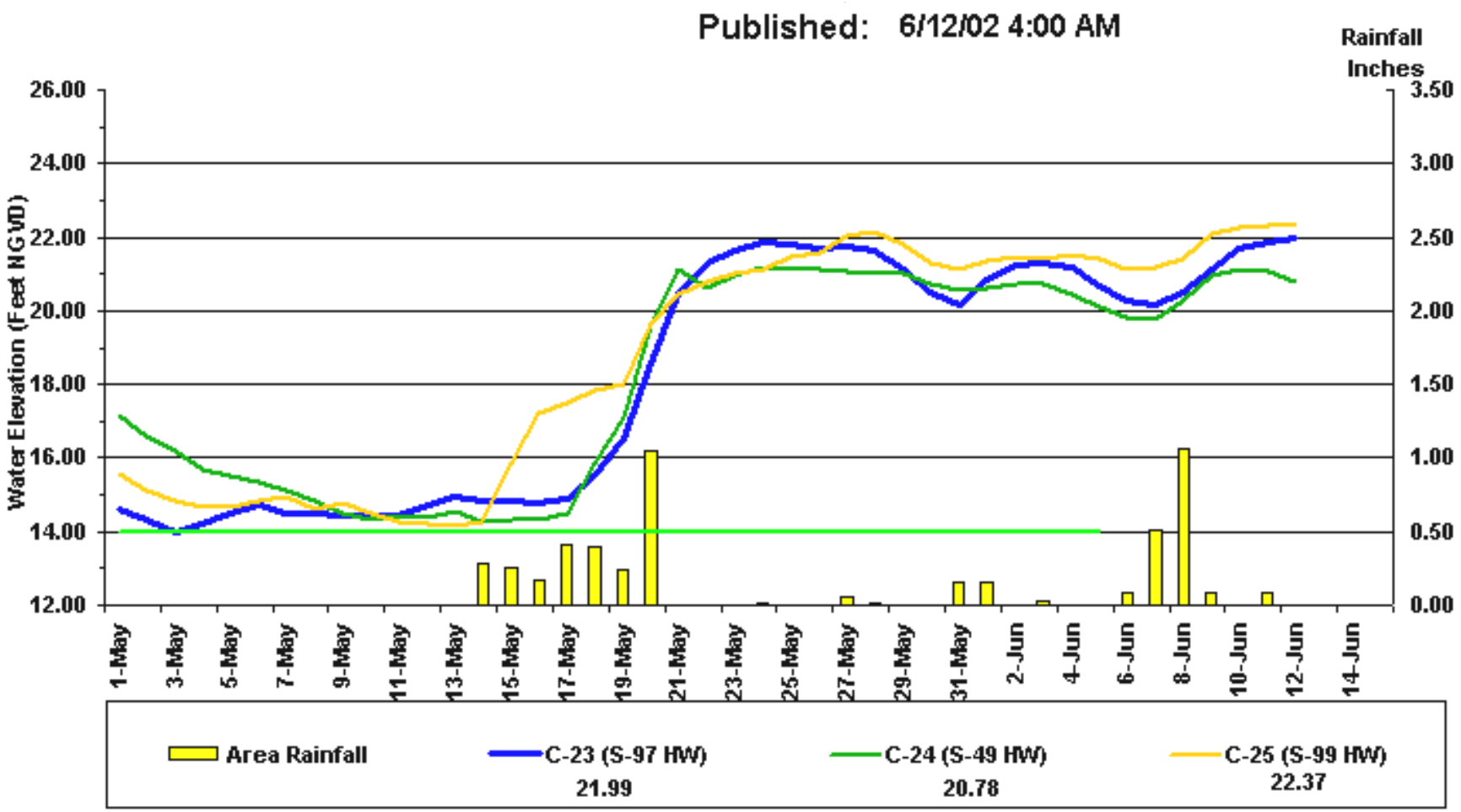


Upper East Coast

- Water levels in the C-23, C-24 & C-25 canals have rebounded in response to early wet season rainfall

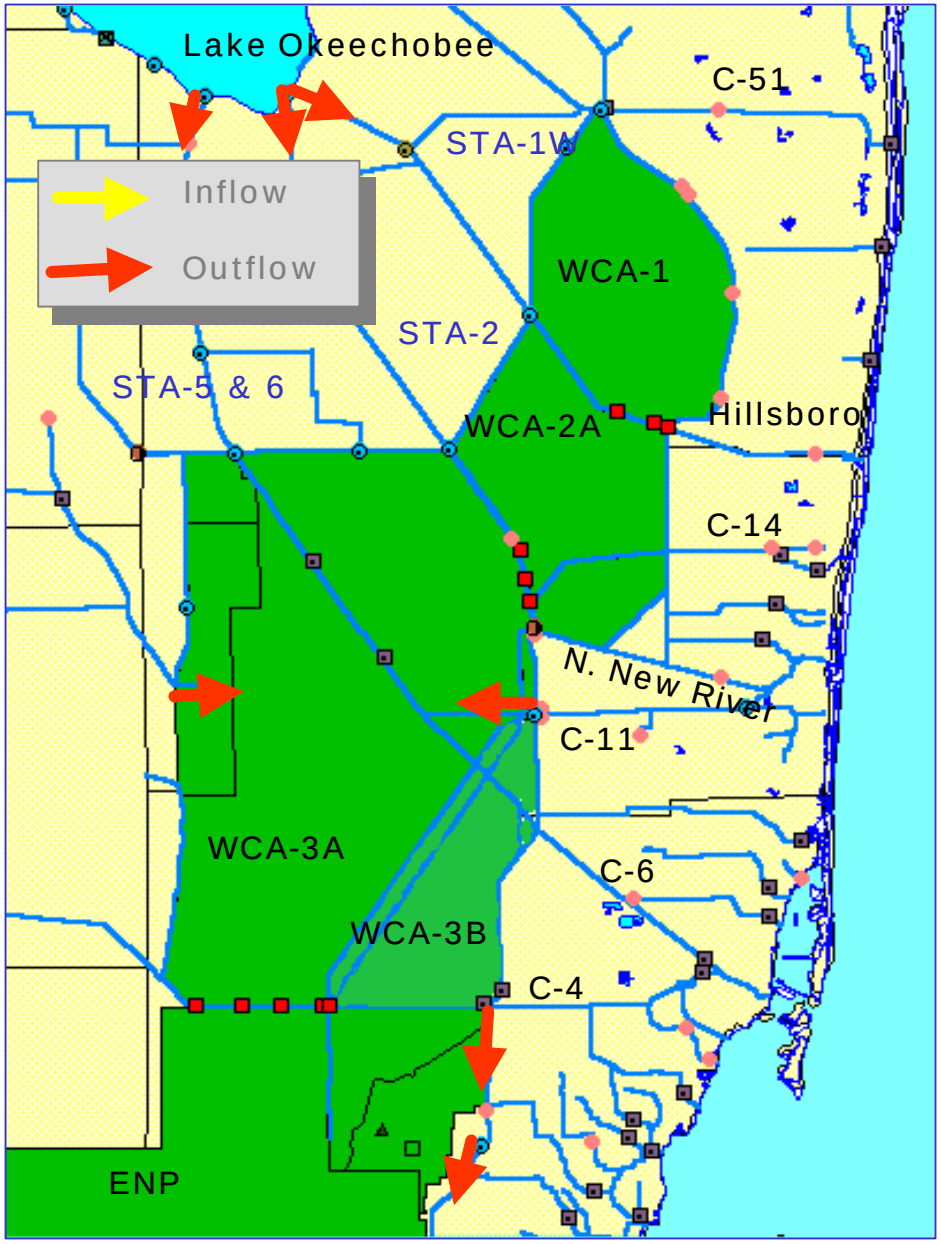


Upper East Coast
Structures on C-23, C-24 & C-25



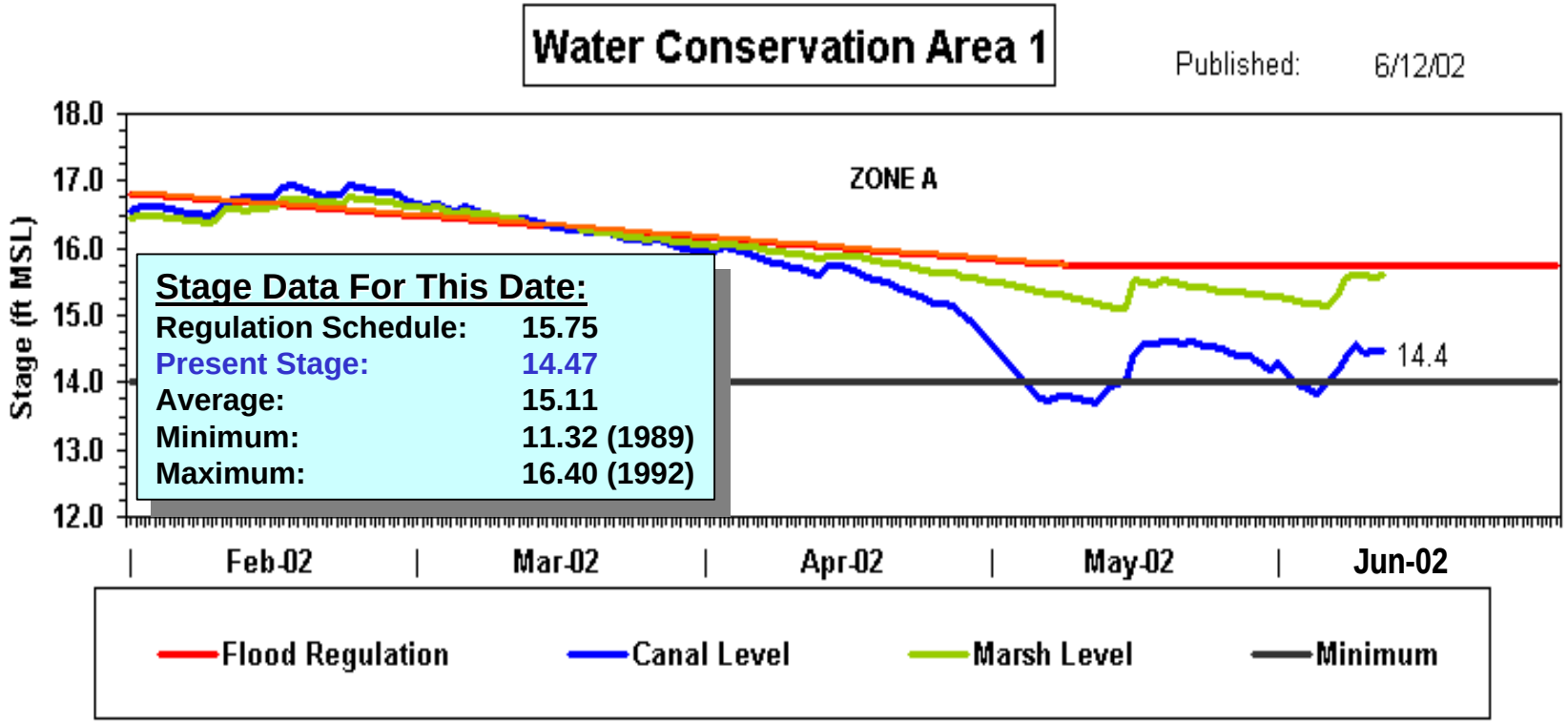
Water Conservation Areas

- WCA stages are currently above their environmental “floors”
- No releases are currently being made to meet water supply demands
  - Minor “pass-through” deliveries for LEC water supply were made thru WCA-1 in early June
- No regulatory releases required at this time



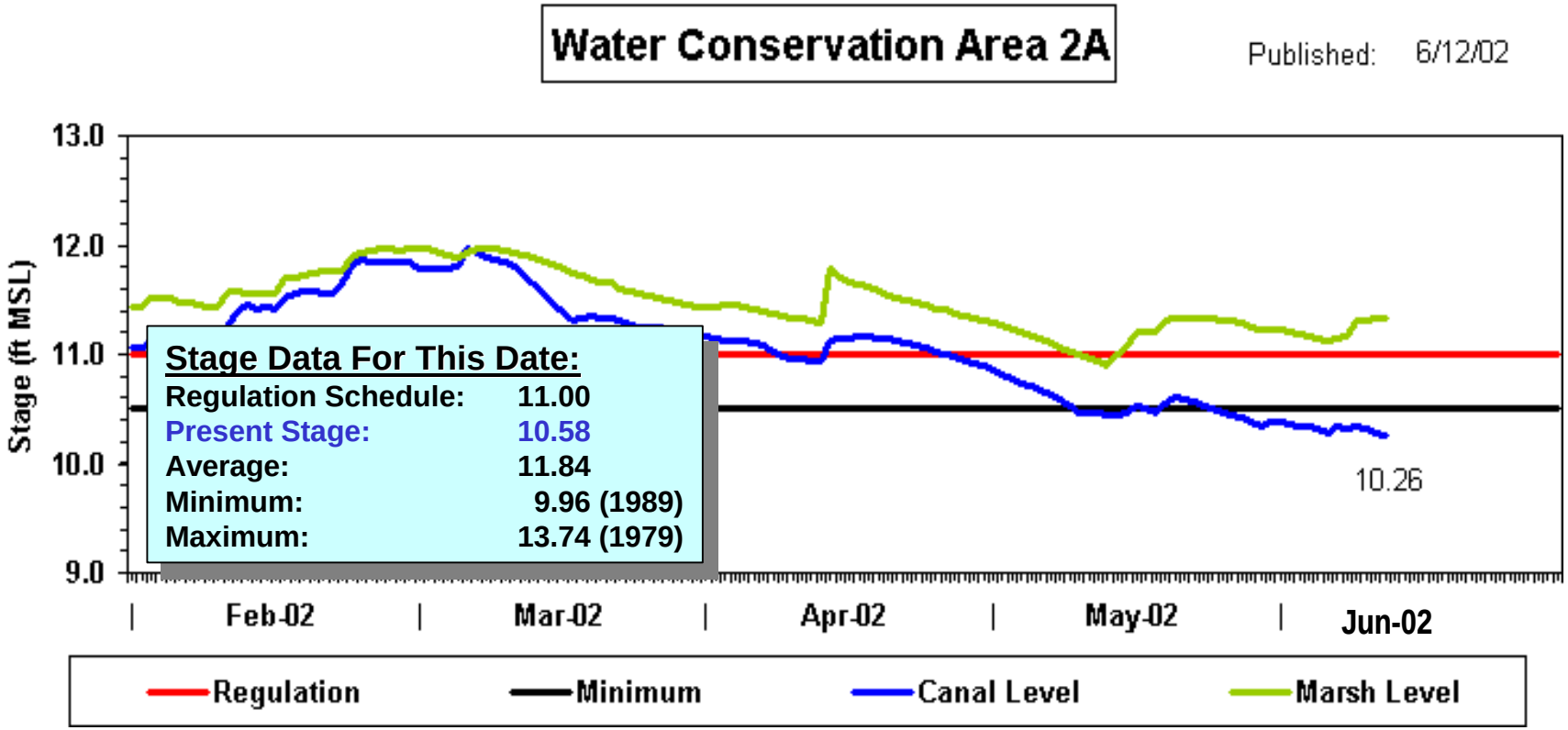
Hydrologic Conditions
Water Conservation Areas

- Stages briefly below the environmental floor in June
- Water from Lake Okeechobee was brought in to offset water supply releases to LEC



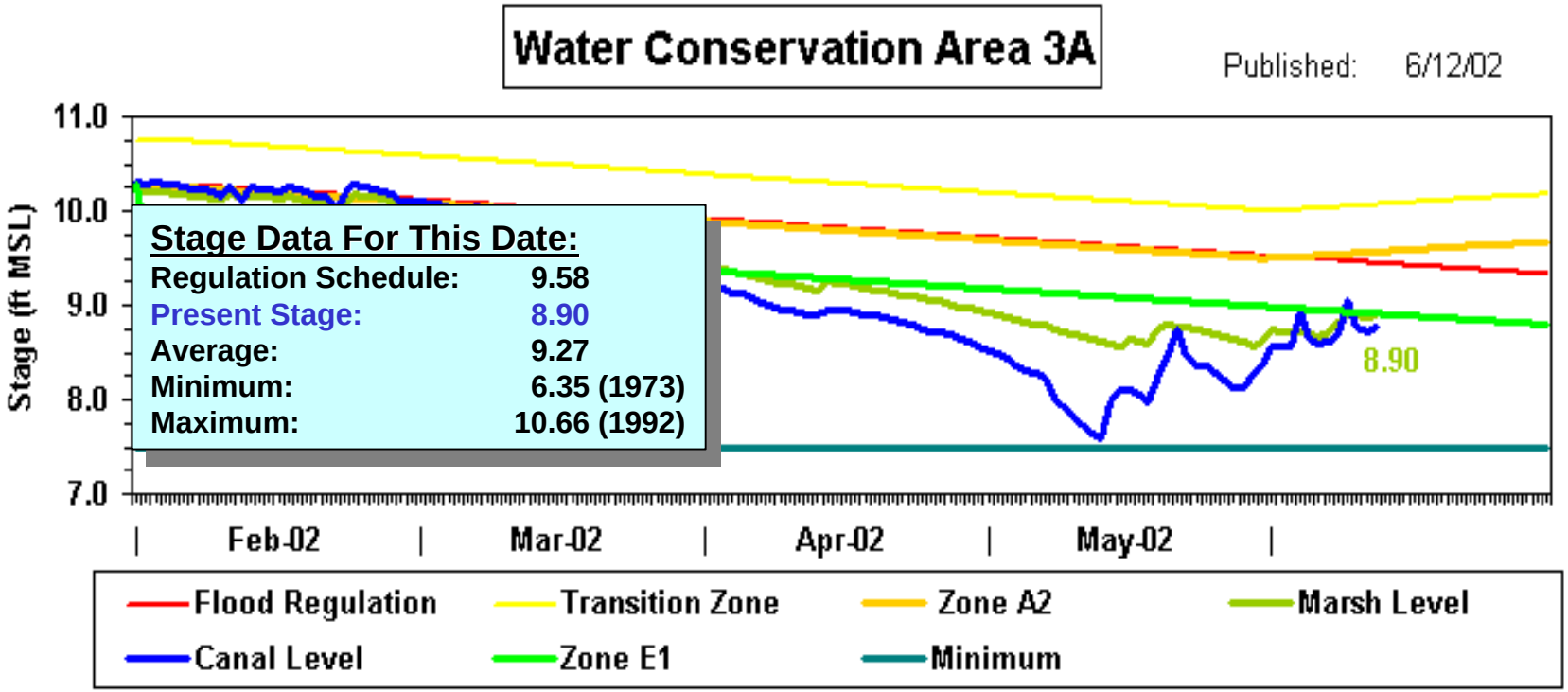
Hydrologic Conditions
Water Conservation Areas

- WCA-2A stages below “floor” elevation (10.5 ft. NGVD)
- No water supply releases required



Hydrologic Conditions
Water Conservation Areas

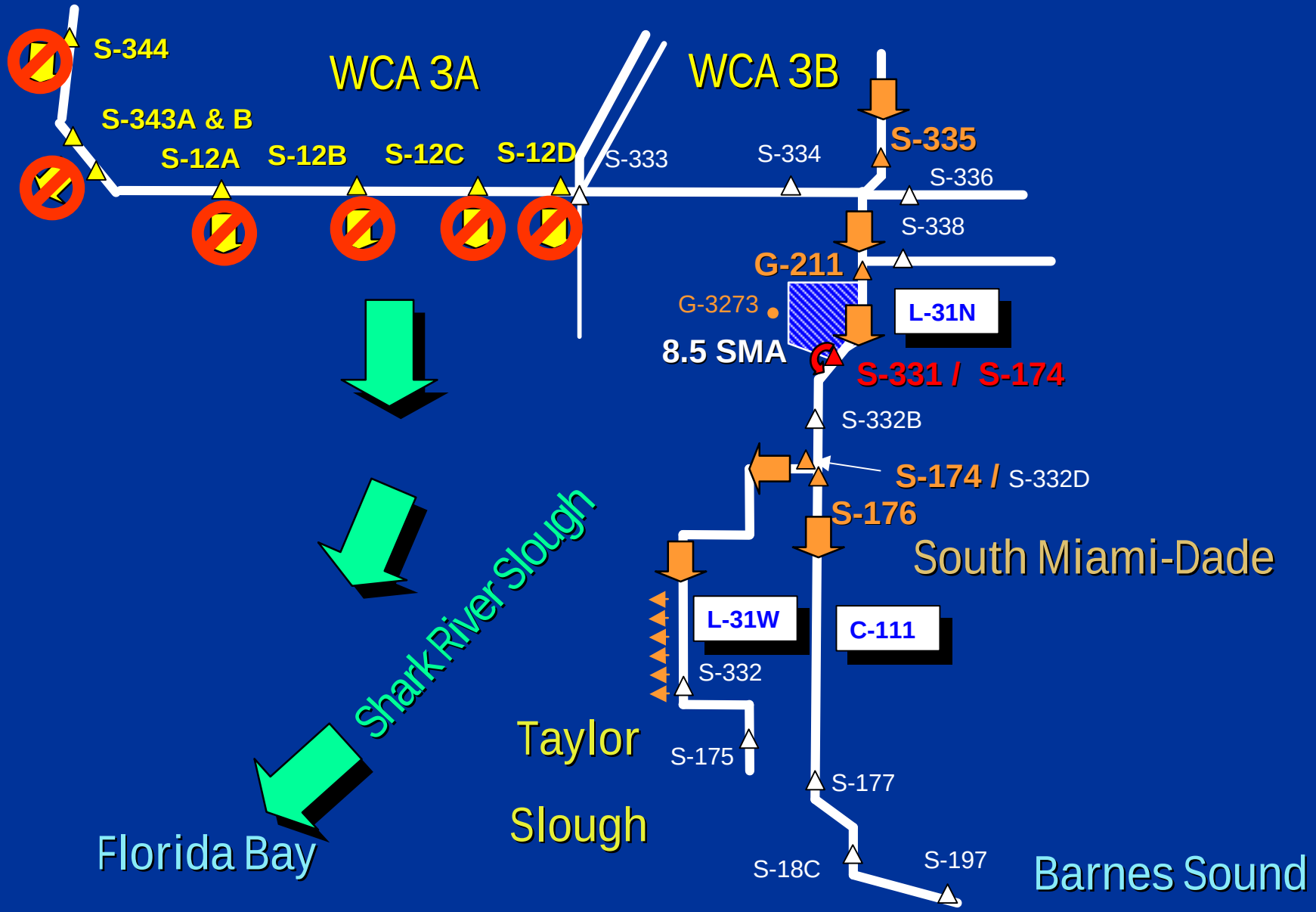
- WCA-3A stages presently above “floor” (7.5 ft. NGVD) and rising
- Stages approaching lower zone of the regulation schedule



Hydrologic Conditions
SDCS - ISOP 2001 Current Operations

- ISOP 2001 criteria continues to be followed and closely coordinated with the USACE.
- WCA-3A Operations are currently supporting water supply demands
  - Urban / Agriculture
  - Everglades National Park / Florida Bay

SDCS - ISOP 2001 June Operations

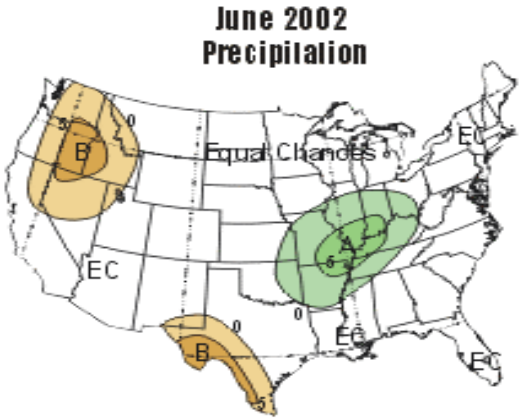


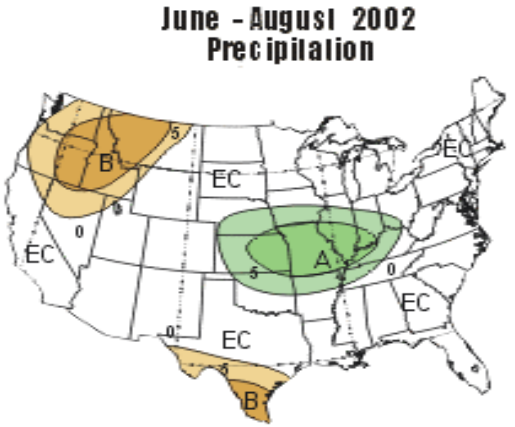
Climate Outlook

Governing Board Presentation - June 13, 2002

Seasonal Climatic Outlook

- CPC reports that the period from June to August 2002 has no increased probability for either above or below average precipitation

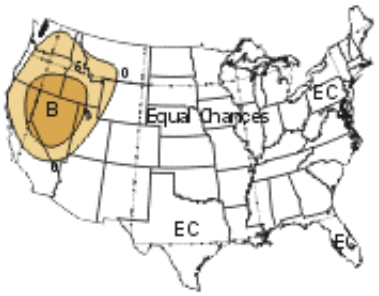




Release Date: May 16, 2002

Seasonal Outlook **Precipitation** Release Date: May 16, 2002

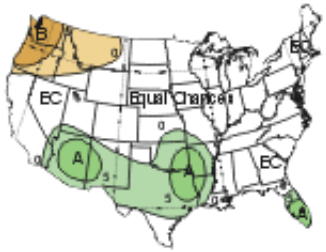
July - September 2002



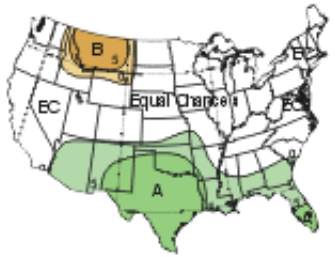
August - October 2002

September - November 2002

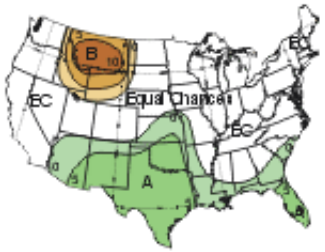
October - December 2002



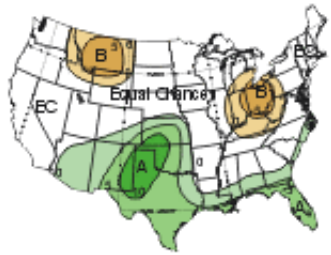
November 2002 - January 2003



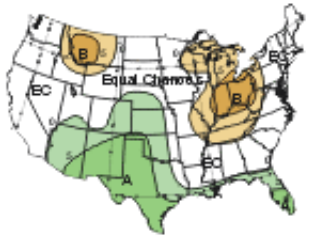
December 2002 - February 2003



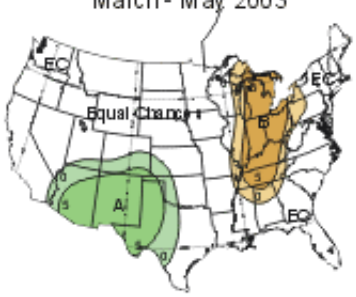
January - March 2003



February - April 2003



March - May 2003



April - June 2003

May - July 2003

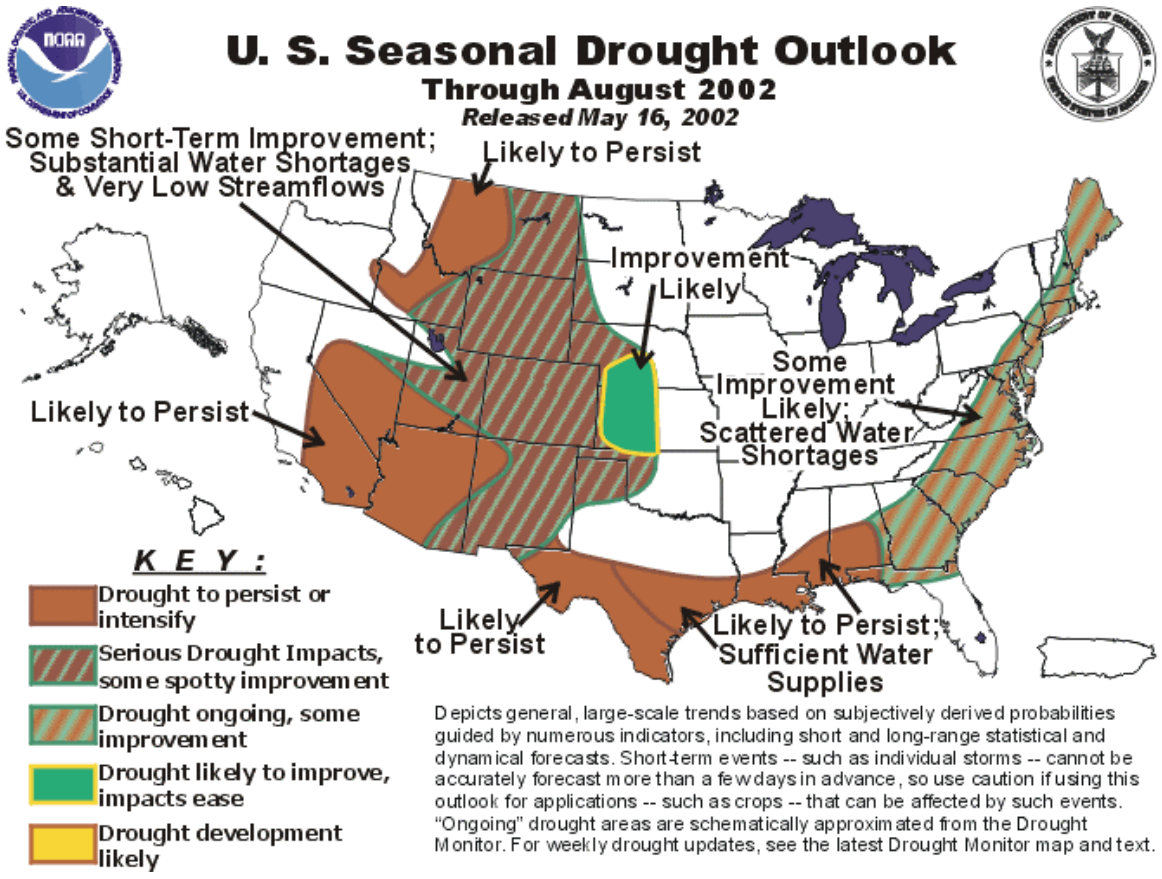
June - August 2003

Hydrologic Outlook

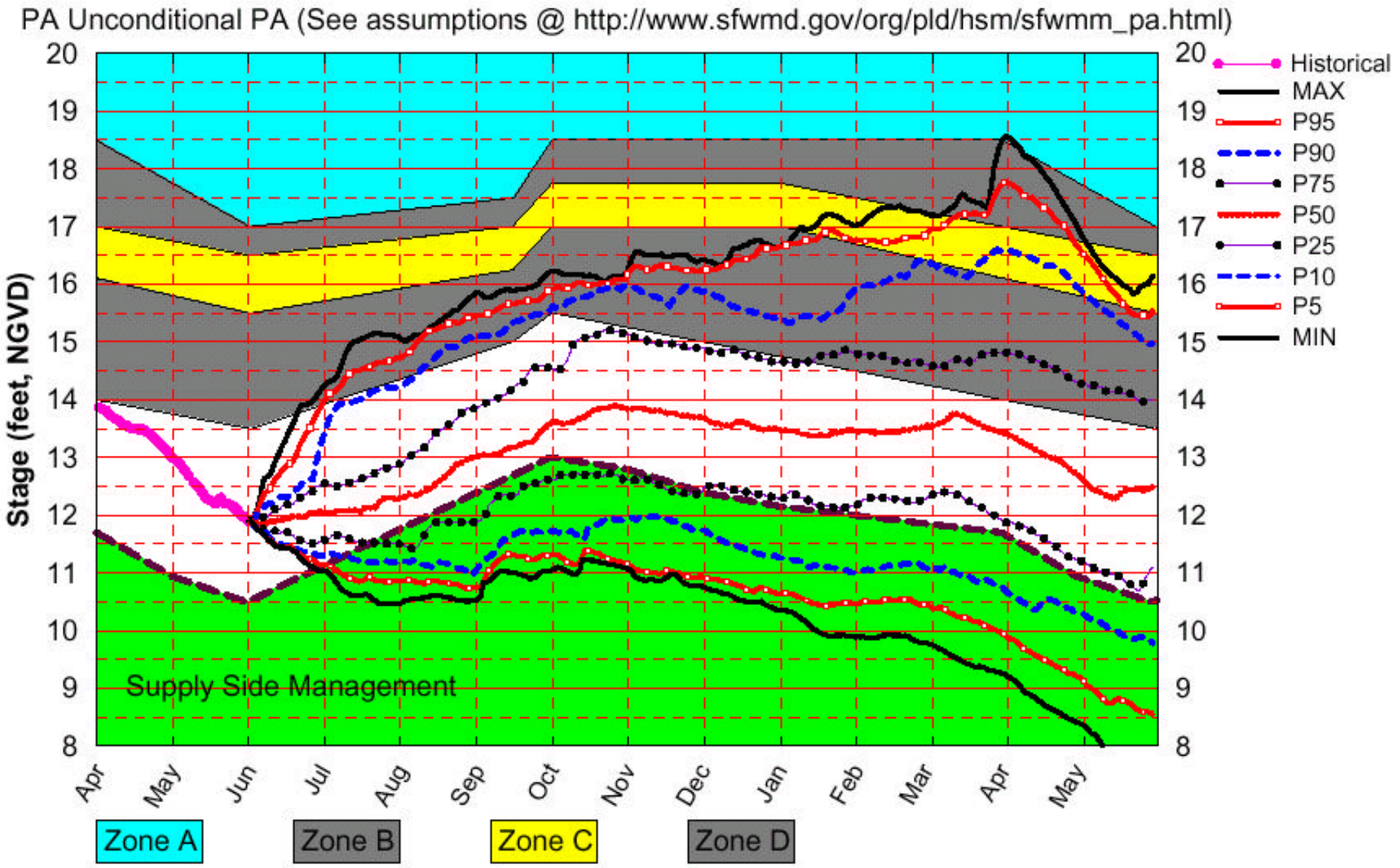
Governing Board Presentation - June 13, 2002

Drought Outlook

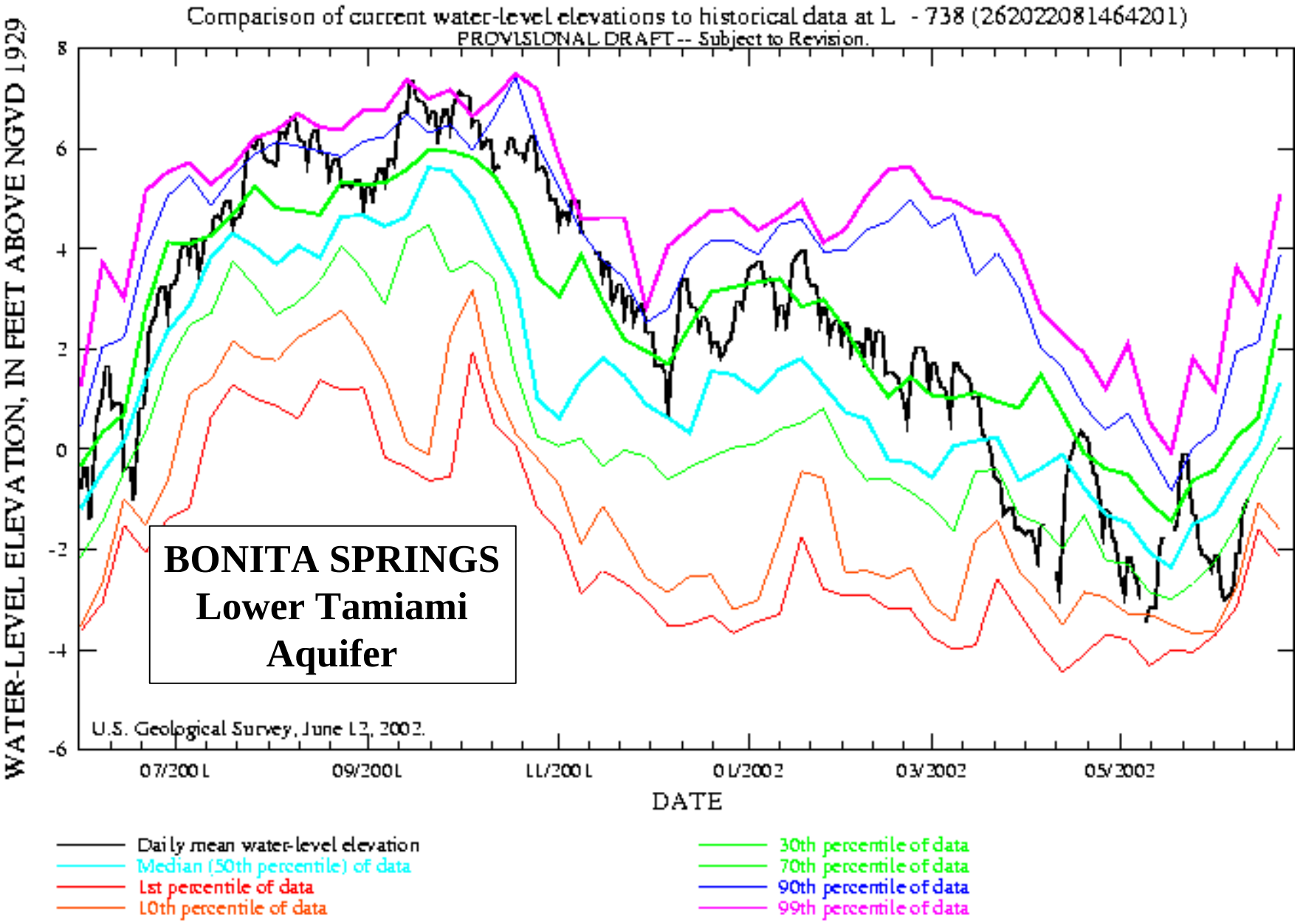
- No drought conditions expected through at least through August 2002

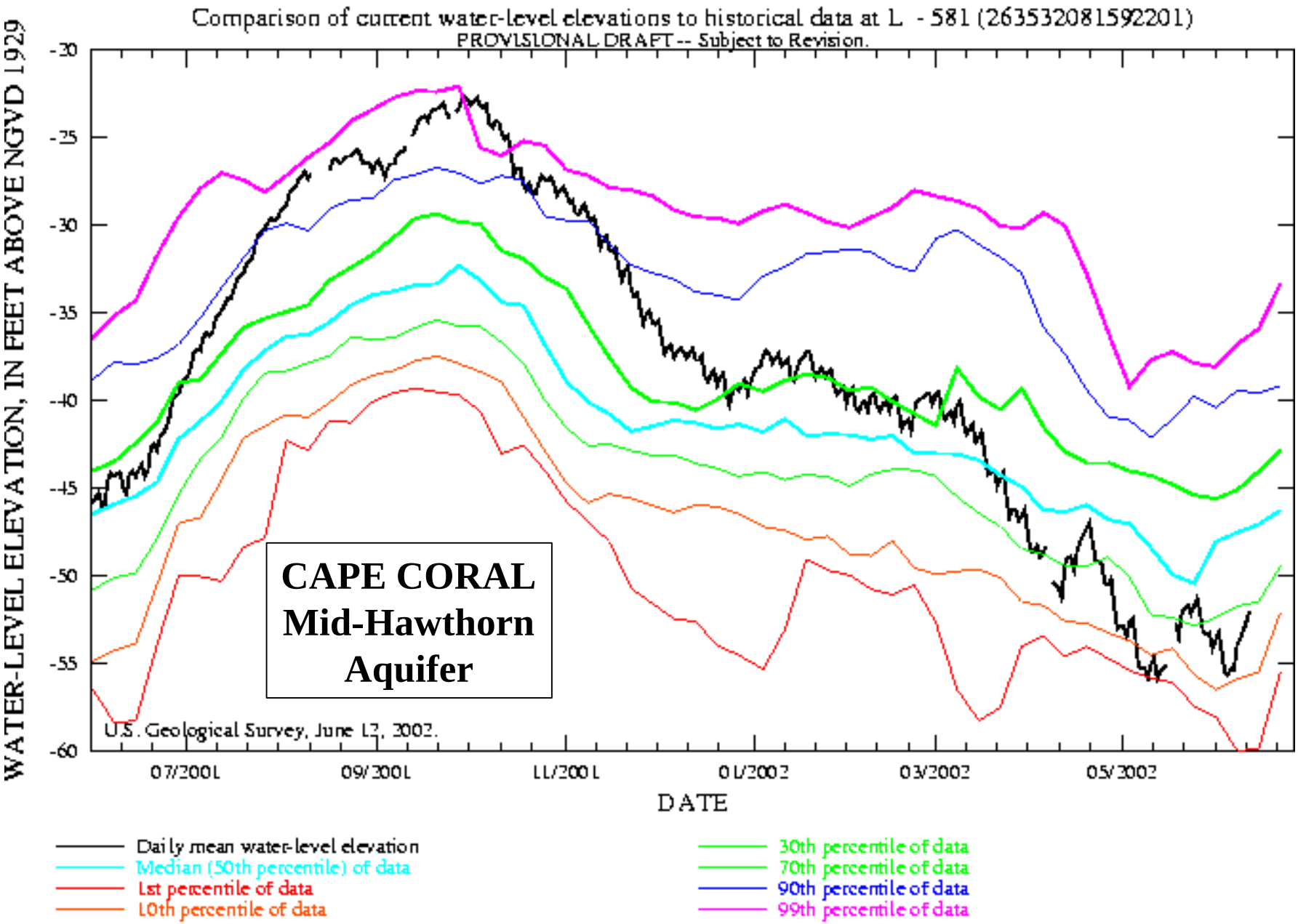


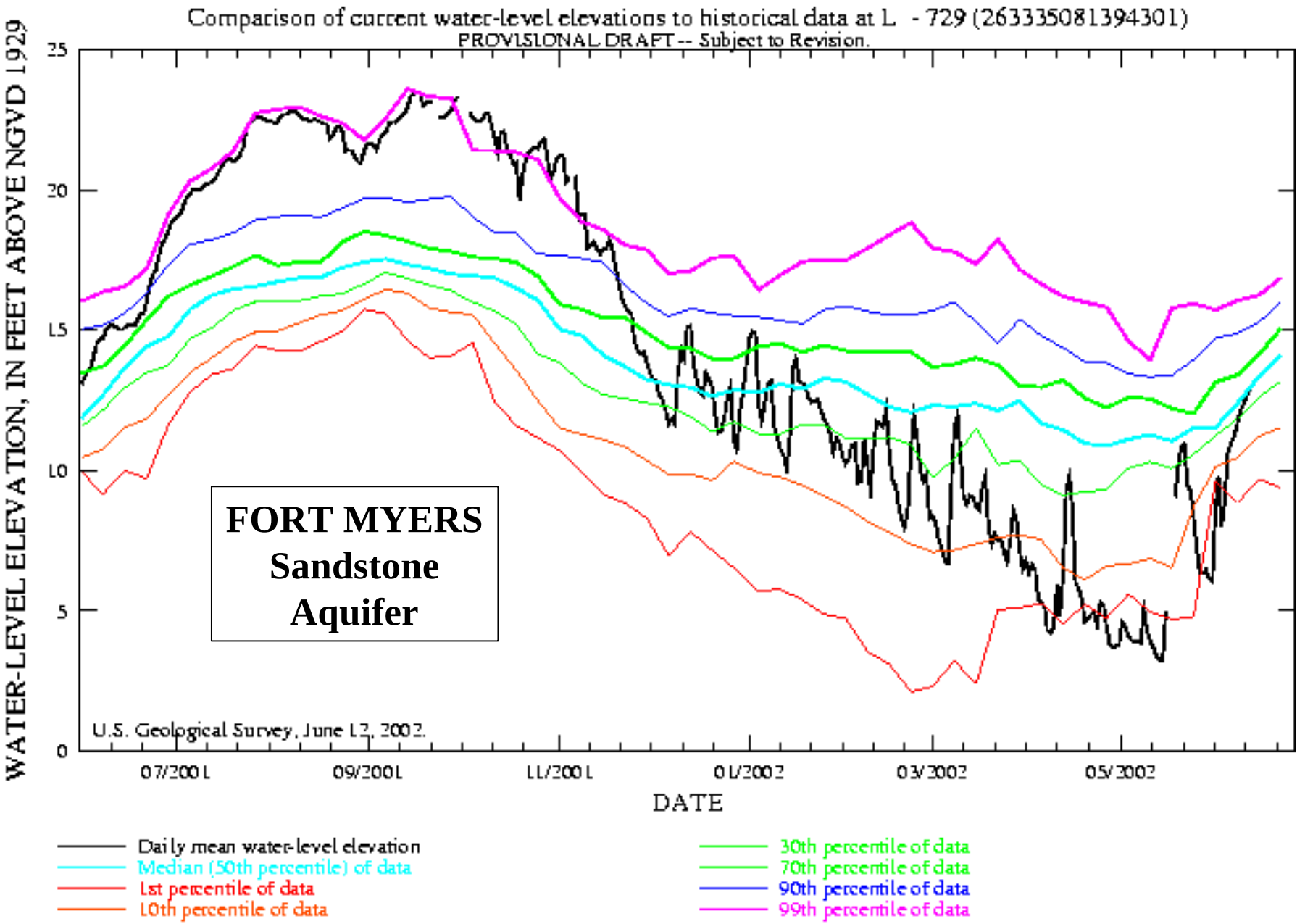
Lake Okeechobee SFWMM Jun 2002 Position Analysis

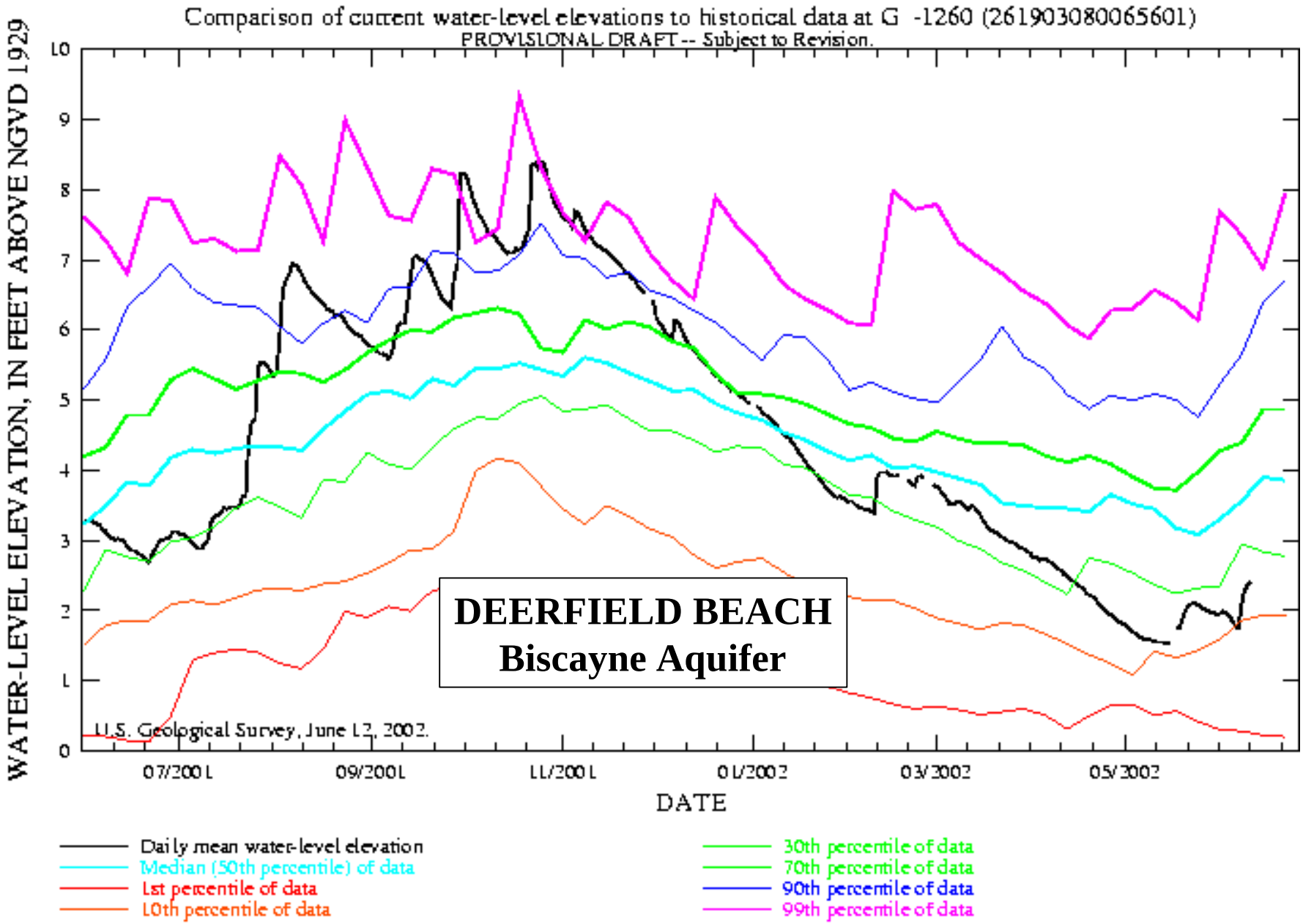


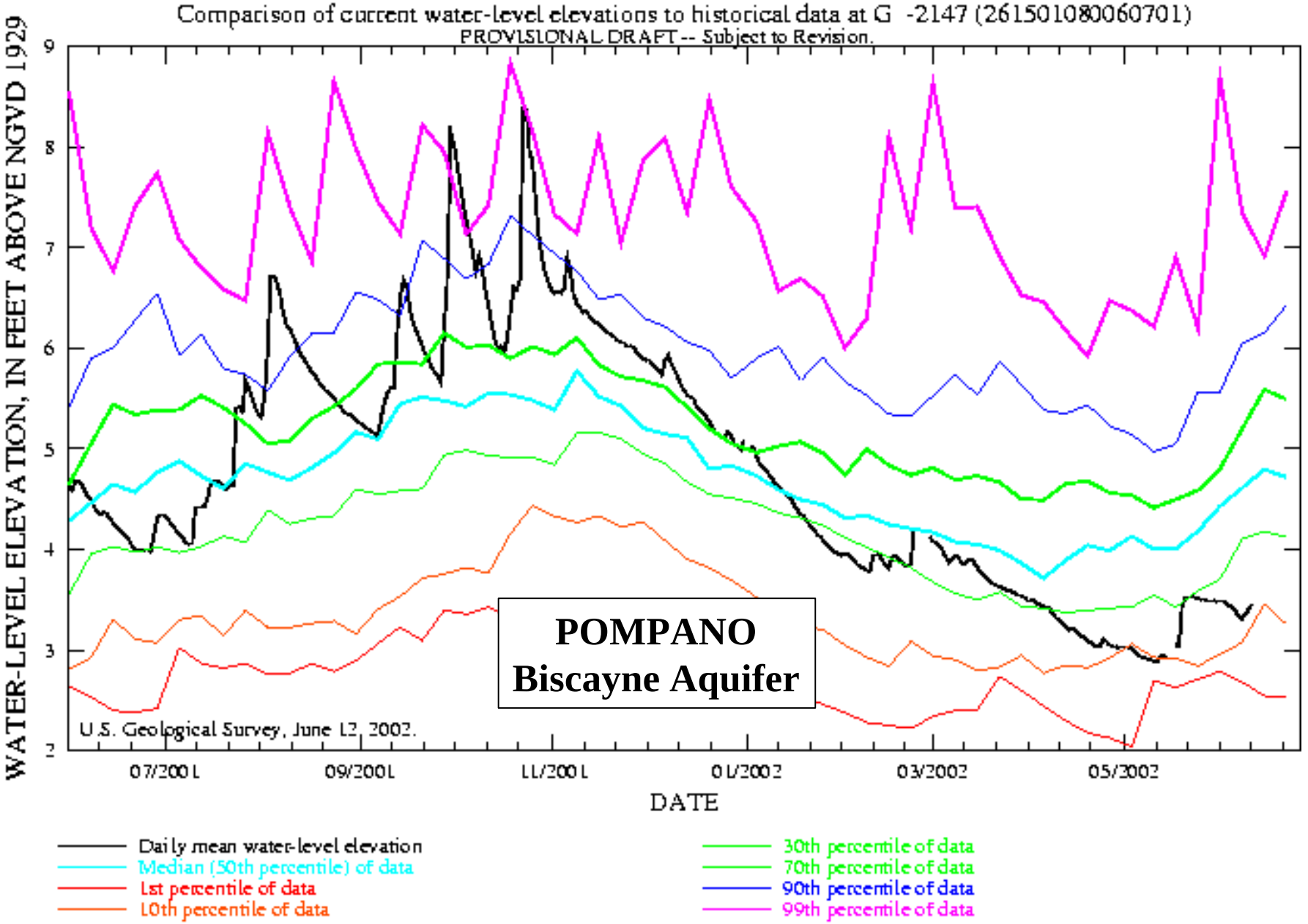
Governing Board Presentation - June 13, 2002

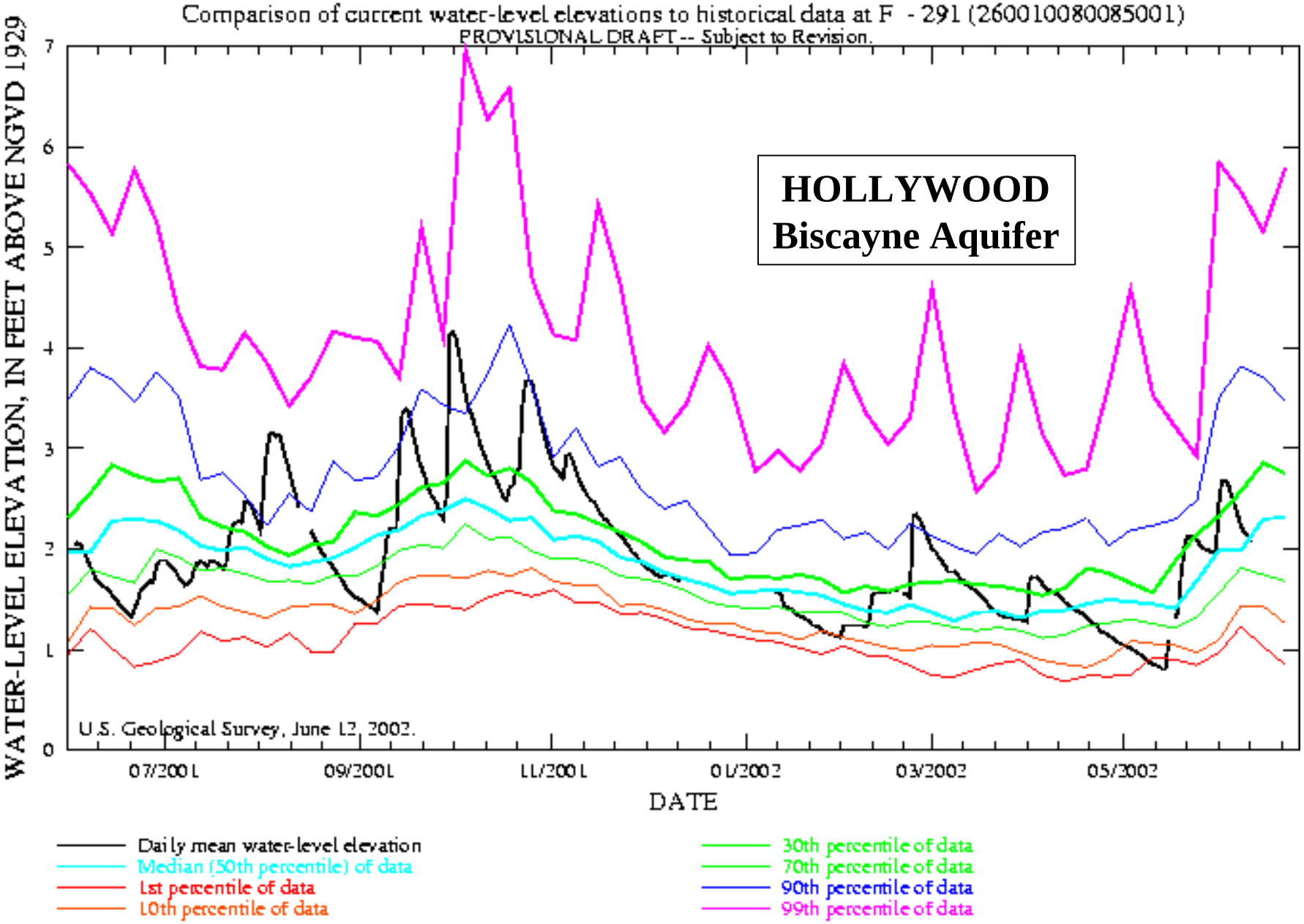

Comparison of current water-level elevations to historical data at L - 738 (262022081464201)
PROVISIONAL DRAFT -- Subject to Revision.
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
8
6
4
2
0
-2
-4
-6
BONITA SPRINGS
Lower Tamiami
Aquifer
U.S. Geological Survey, June 12, 2002.
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data

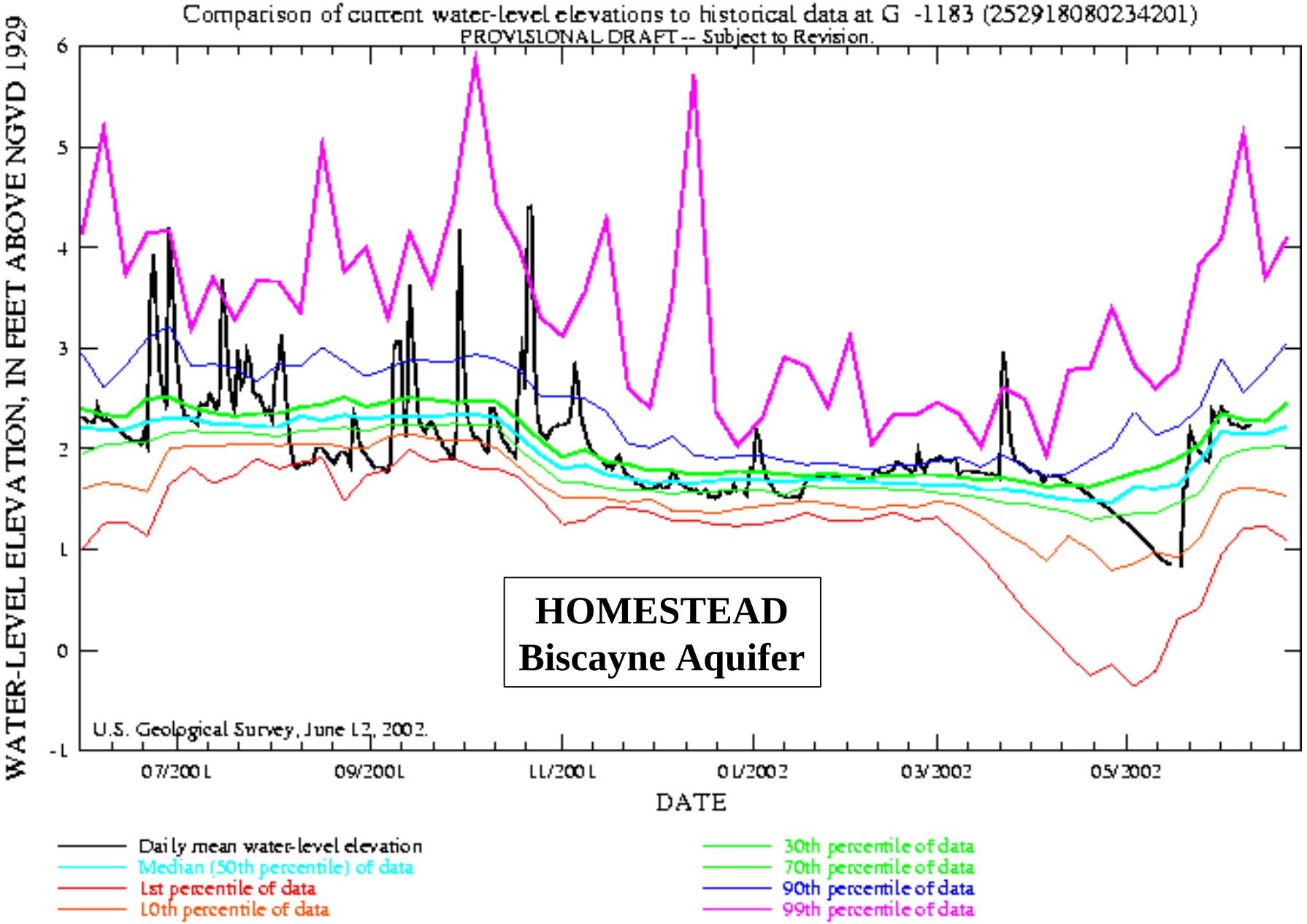

Comparison of current water-level elevations to historical data at L - 581 (263532081592201)
PROVISIONAL DRAFT -- Subject to Revision.
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
-30
-25
-30
-35
-40
-45
-50
-55
-60
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
CAPE CORAL
Mid-Hawthorn
Aquifer
U.S. Geological Survey, June 12, 2002.
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data


Comparison of current water-level elevations to historical data at L - 729 (263335081394301)
PROVISIONAL DRAFT -- Subject to Revision.
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
25
20
15
10
5
0
FORT MYERS
Sandstone
Aquifer
U.S. Geological Survey, June 12, 2002.
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data

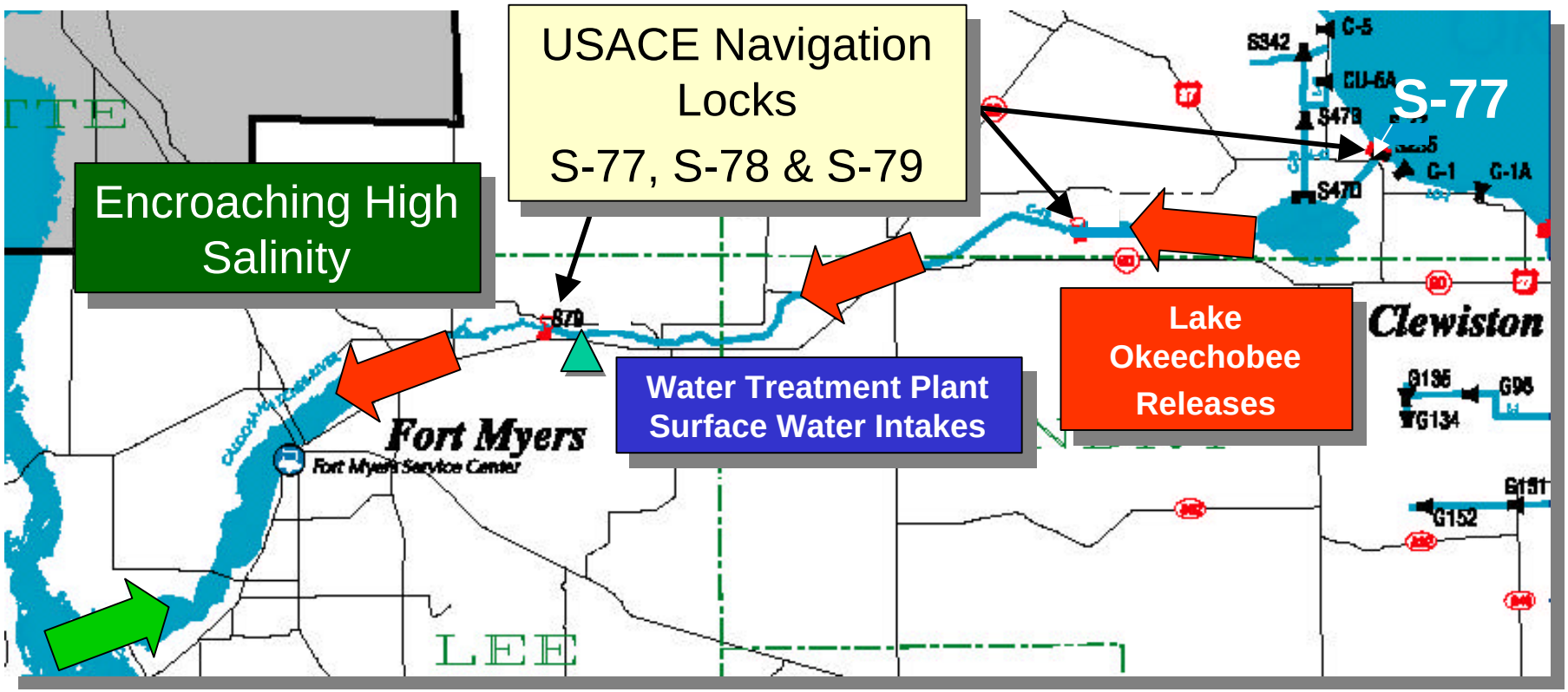

Comparison of current water-level elevations to historical data at G -1260 (261903080065601)
PROVISIONAL DRAFT -- Subject to Revision.
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
10
9
8
7
6
5
4
3
2
1
0
DEERFIELD BEACH
Biscayne Aquifer
U.S. Geological Survey, June 12, 2002.
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data


Comparison of current water-level elevations to historical data at G -2147 (261501080060701)
PROVISIONAL DRAFT -- Subject to Revision.
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
9
8
7
6
5
4
3
2
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
POMPANO
Biscayne Aquifer
U.S. Geological Survey, June 12, 2002.
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data


Comparison of current water-level elevations to historical data at F - 291 (260010080085001)
PROVISIONAL DRAFT -- Subject to Revision.
HOLLYWOOD
Biscayne Aquifer
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
0
1
2
3
4
5
6
7
U.S. Geological Survey, June 12, 2002.
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data


Comparison of current water-level elevations to historical data at G -1183 (252918080234201)
PROVISIONAL DRAFT -- Subject to Revision.
WATER-LEVEL ELEVATION, IN FEET ABOVE NGVD 1929
6
5
4
3
2
1
0
-1
HOMESTEAD
Biscayne Aquifer
U.S. Geological Survey, June 12, 2002.
07/2001
09/2001
11/2001
01/2002
03/2002
05/2002
DATE
Daily mean water-level elevation
Median (50th percentile) of data
1st percentile of data
10th percentile of data
30th percentile of data
70th percentile of data
90th percentile of data
99th percentile of data

Caloosahatchee River



- In periods of low flow, salt water intrusion threatens aquatic grass beds and public water systems of Lee Co. and Ft. Myers
- Current weather and hydrologic conditions have required periodic low volume environmental releases from Lake Okeechobee with the goal of maintaining favorable salinity concentrations in the lower estuary